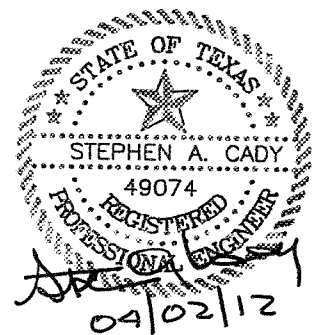


PLANS AND SPECIFICATIONS
FOR
CITY OF LEON VALLEY
BID #2012-02
2012 WATER AND SANITARY SEWER PROJECTS

MAYOR
CHRIS RILEY

CITY MANAGER
MANNY LONGORIA

CITY COUNCIL
IRENE BALDRIDGE
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APRIL 2012

Prepared By:

SAN ANTONIO DESIGN GROUP, INC.
CIVIL ENGINEERS
SAN ANTONIO, TEXAS 78213

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2012 WATER AND SANITARY SEWER PROJECTS CITY OF LEON VALLEY

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SECTION 00100 BID ADVERTISEMENT

ADVERTISEMENT FOR BIDS FOR: 2012 Water and Sanitary Sewer Projects, Bid No. 2012-02, consisting of replacing approximately 635 lf of 8" AC water mains with 8" PVC pipe and 1,180 lf of 6" AC water mains with 6" PVC pipe, replacing or installing gate valves in 13 locations, replacing fire hydrants in nine locations and the replacement of approximately 392 lf of 8" clay sanitary sewer pipe with 8" PVC pipe, and one sanitary sewer point repair, all situated in various locations within the City of Leon Valley.

The City of Leon Valley, Texas, will receive sealed bids until April 24, 2012, at 2:00 p.m. at the Office of the Purchasing Agent of the City of Leon Valley, Texas; 6400 El Verde Road; Leon Valley, Texas 78238, at which time bids will be publically opened and read aloud.

Copies of the plans and specifications may be examined without charge at The City of Leon Valley, 6400 El Verde Road, Leon Valley, Texas 78238-2399, or they can be obtained at the office of the Purchasing Agent upon payment of \$25.00 for each set. Checks should be made out to The City of Leon Valley. Mailed plans and specifications will require a \$10.00 non-refundable mailing fee. The entire amount of deposit will be refunded upon return of the plans and specifications within 10 days of the bid opening.

Bids must be submitted on the proposal form furnished with the specifications. The envelope containing any proposal shall be endorsed "Bid 2012-02 for 2012 Water and Sanitary Sewer Projects". Each bid shall be accompanied by a proposal guarantee in the form of a certified check, cashier's check, or bid bond in the amount of five percent (5%) of the total bid price. Any bid received after closing time will be returned unopened.

Attention is called to the fact that, pursuant to V.T.C.S. Art. 5159a, not less than the local prevailing wage rate derived from ordinance # 99-001 included herein (see 00810-1), must be paid on this locally funded project.

The successful bidder will be required to furnish a one hundred percent (100%) Performance Bond and one hundred percent (100%) Payment Bond.

The City of Leon Valley reserves the right to reject any and all bids, to award the contract in what it deems its best interest and to waive any informality or technicality in the proposal, and agrees to take action within sixty (60) days after the bid opening.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

SECTION 00200 INSTRUCTIONS TO BIDDERS

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
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AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute

The suggested language contained in this Guide to the Preparation of Instructions to Bidders has been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2, 1996 Editions) and the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition). The suggested language is carefully integrated with that of the Guide to the Preparation of Supplementary Conditions (No. 1910-17, 1996 Edition) and the Guide to Preparation of the Bid Form (No. 1910-18, 1996 Edition).

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SECTION 00200 INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- A. *Bidder*--The individual or entity who submits a Bid directly to OWNER.
- B. *Issuing Office*--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- C. *Successful Bidder*--The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.
- D. *Owner* - City of Leon Valley
- E. *Engineer* - City Engineer

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the purchase sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of OWNER's request Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

- A. *Name, address and telephone number of the bonding company, authorized to do business in the State of Texas, which would furnish Payment and Performance Bonds in the amount of your bid;*
- B. *Name, address and telephone number of the insurance company, authorized to do business in the State of Texas, which would furnish Certificate(s) of Insurance per the requirements in the Supplemental Special Conditions and General Conditions.*
- C. *If CONTRACTOR plans to utilize subcontractors for this project, also furnish all of the requested information on the subcontractor's firm(s).*
- D. *CONTRACTOR shall complete and submit with his bid, CONTRACTOR'S disclosure Statement included in Section 00820 of these Specifications.*
- E. *CONTRACTOR shall submit with his bid, a copy of his Worker's Compensation insurance certificate.*

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 *Subsurface and Physical Conditions*

- A. There are no reports of explorations and test of subsurface conditions for this project.

4.02 *Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.

4.03 *Hazardous Environmental Condition*

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.

- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 On request, OWNER will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;

- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;

- D. carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;

- E. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or

which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and

J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work..

ARTICLE 5 - PRE-BID CONFERENCE

5.01 There will be no pre-bid conference for this project.

ARTICLE 6 - SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 8 - BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of 5% of Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond, on the form attached, issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the General Requirements.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

12.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to

the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from ENGINEER.

13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each Bid item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid form.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

15.01 Each prospective Bidder will be furnished with one copy of the Bidding Documents.

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to

*City of Leon Valley
Office of the Purchasing Agent
6400 El Verde Road
Leon Valley, Texas 78238
(210) 684-1391 ext. 222*

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 - AWARD OF CONTRACT

19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

19.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 - SALES AND USE TAXES

22.01 The City is an exempt entity for the purpose of sale tax.

A. The purchase of tangible personal property or a taxable service for this project is exempt from sales tax to the extent allowed by 34 Texas Administration Code 3.291 (See Instruction to Bidding).

B. Bidders must include all applicable taxes in their cost of their work.

C. Exemption notice to be provided upon request.

ARTICLE 23 - RETAINAGE

23.01 Provisions concerning CONTRACTOR's rights to deposit securities in lieu of retainage are set forth in the Agreement.

ARTICLE 24 - CONTRACTS TO BE ASSIGNED

24.01 Bidders may examine the documents for these contracts at the Issuing Office

ARTICLE 25 - PARTNERING

25.01 OWNER does not intend to participate in a partnering process with CONTRACTOR.

This document has important consequences; consultation with an attorney is encouraged with respect to its completion or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

SECTION 00300

BID FORM

Prepared by
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE
and
Issued and Published Jointly By

A practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by
The Associated General Contractors of America
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This Guide to the Preparation of Bid Form has been prepared for use with Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2, 1996 Editions), Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition), and suggested language contained in the Guide to the Preparation of Instructions to Bidders (No. 1910-12, 1996 Edition). See also Guide to the Preparation of Supplementary Conditions (No. 1910-17, 1996 Edition), and Recommended Competitive Bidding Procedures for Construction Projects (Bidding Procedures) by Robert J. Smith, P.E., Esq. (No. 1910-9-D, 1987 Edition).

EJCDC No. 1910-18 (1996 Edition)

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1015 10th Street, N.W., Washington, D.C. 20005

American Society of Civil Engineers
345 East 47th Street, New York, NY 10017

BID FORM

PROJECT IDENTIFICATION:

*City of Leon Valley
2012 Water and Sanitary Sewer Projects
Bid No. 2012-02*

THIS BID IS SUBMITTED TO:

City of Leon Valley
Office of the Purchasing Agent
6400 El Verde Road
Leon Valley, Texas 78238
(210) 684-1391 ext. 222

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the

Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

2012 WATER AND SANITARY SEWER PROJECTS BID FORM

Item No.	Approximate Quantities	Item Description	Unit Bid Price		Amount Bid	
			Dollars	Cents	Dollars	Cents
		WATER PROJECTS				
100	1 LS	MOBILIZATION & BONDS				
410	5 CY	GRAVEL SUBGRADE FILLER				
500	145 LF	REMOVE AND REPLACE CONCRETE CURB				
502	90 SY	REMOVE AND REPLACE CONCRETE SIDEWALKS AND DRIVEWAYS				
516	40 SY	SODDING				
530	1 LS	BARRICADES, SIGNS & TRAFFIC HANDLING				
550	1,812 LF	TRENCH EXCAVATION SAFETY PROTECTION				
800	555 SY	BASE AND PAVEMENT REPLACEMENT				
812	635 LF	8" PVC C-900 WATER MAIN INSTALLATION				
812	1,180 LF	6" PVC C-900 WATER MAIN INSTALLATION				
824	12 EA	1" COPPER SERVICE LINE RECONNECTS				
828	2 EA	8" GATE VALVES				
828	10 EA	6" GATE VALVES				
828	2 EA	FIRE HYDRANTS, COMPLETE				
836	2.1 TN	GREY-IRON AND DUCTILE IRON FITTINGS				
840	2 EA	8" WATER TIE-INS				
840	7 EA	6" WATER TIE-INS				
841	3 EA	HYDROSTATIC TESTING OPERATIONS				
844	3 EA	TEMPORARY BLOW-OFF ASSEMBLIES				
3000	1 LS	REMOVAL, TRANSPORTATION, AND DISPOSAL OF AC PIPE				

Bidder's Signature: _____

Amount Bid This Sheet: _____

Subtotal Amount Bid: _____

2012 WATER AND SANITARY SEWER PROJECTS BID FORM
Amount Brought Forward _____

Item No	Approximate Quantities	SANITARY SEWER PROJECTS Item Description	Unit Bid Price		Amount Bid	
			Dollars	Cents	Dollars	Cents
100	1 LS	MOBILIZATION & BONDS				
410	3 CY	GRAVEL SUBGRADE FILLER				
500	25 LF	REMOVE & REPLACE CONCRETE CURBS				
502	10 SY	REMOVE & REPLACE CONCRETE SIDEWALKS				
516	180 SY	SODDING				
530	292 LF	TRENCH EXCAVATION SAFETY PROTECTION				
800	10 SY	BASE AND PAVEMENT REPLACEMENT				
848 00	30 LF	8" PVC SDR 26 SANITARY SEWER (0'-6" DEEP)				
848 00	226 LF	8" PVC SDR 26 SANITARY SEWER (6'-8" DEEP)				
848 0	136 LF	8" PVC SDR 26 SANITARY SEWER (8'-10" DEEP)				
854.1	40 LF	SANITARY SEWER LATERALS				
	1 EA	FLAPPER BACKFLOW VALVE				
858 0	0.6 CY	CONCRETE ENCASEMENT AND CRADLES				
	1 LS	FURNISH ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE, IN PLACE, SANITARY SEWER POINT REPAIR #1				

Bidder's Signature: _____

Amount Bid This Sheet: _____

Total Amount Water & Sewer Bid: _____

6.01 Bidder agrees that the Work will be substantially completed and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid Bond;
- B. Required bidder qualifications statement with supporting data.
- C. Evidence of Workers Compensation Insurance

8.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on _____, 2010.

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

**SECTION 00410
BID BOND**

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

*City of Leon Valley
6400 El Verde Road
Leon Valley, Texas 78238
(210) 684-1391 ext. 222*

BID

BID DUE DATE: April 24, 2012

PROJECT (Brief Description Including Location):

2012 Water and Sanitary Sewer Projects - Bid No. 2012-02

BOND

BOND AMOUNT: 5% Of the total bid price.

BOND NUMBER: _____

DATE (Not later than Bid due date): _____

PENAL SUM: _____
(Words) (Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

(Seal)
Bidder's Name and Corporate Seal

(Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: (1) Above addresses are to be used for giving required notice.
(2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or

3.2. All Bids are rejected by OWNER, or

3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification.

**SECTION 00500
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute

This Standard Form of Agreement has been prepared for use with the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition). Their provisions are interrelated, and a change in one may necessitate a change in the other. The suggested language for instructions of bidders contained in the Guide to the Preparation of Instructions to Bidders (No. 1910-12, 1996 Edition) is also carefully interrelated with the language of this Agreement. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50). See also Guide to the Preparation of Supplementary Conditions (No. 1910-17, 1996 Edition).

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National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2715

American Consulting Engineers Council
1015 15th Street, N.W., Washington, DC 20005

American Society of Civil Engineers
345 East 47th Street, New York, NY 10017

**EJCDC
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between the *City of Leon Valley* (hereinafter called OWNER) and

(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

2012 Water and Sanitary Sewer Projects - Bid No. 2012-02

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Replacing approximately 635 lf of 8' AC water mains with 8" PVC pipe and 1,180 lf of 6" AC water mains with 6" PVC pipe, replacing or installing gate valves in 13 locations, replacing fire hydrants in nine locations and the replacement of approximately 392 lf of 8" clay sanitary sewer pipe with 8" PVC pipe, and one sanitary sewer point repair, all situated in various locations within the City of Leon Valley.

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by

San Antonio Design Group, Inc
4242 Medical Drive, Suite 5100
San Antonio, Texas 78229
(830) 980-7402 FAX(830) 980-7411

who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Dates for Substantial Completion and Final Payment*

A. The Work will be substantially completed within 60 days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions within 90 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$ \$250.00 for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$ \$250.00 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 - CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraphs 5.01.A, 5.01.B, and 5.01.C below:

A. For all Work, at the prices stated in CONTRACTOR's Bid, for the alternatives or base bid indicated in the Notice of Award.

B. As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

C. STATEMENT OF MATERIALS AND OTHER CHARGES: For the purposes of complying with the Texas Tax Code, this contract shall be a separate contract. Separate prices for materials and services shall be provided by the CONTRACTOR upon award as provided in Paragraph 5.01D. The OWNER shall pay the CONTRACTOR for the proper performance of the contract, subject to additions and deductions provided herein.

D. CONTRACTOR hereby acknowledges and understands that this is a "separate contract" pursuant to recently enacted legislation contained in Texas Administrative Code Title 34, I, 3, O, paragraph 3.291. The following

amount of money represents that part of the total contract price representative of the value of tangible personal property to be physically incorporated into the project reality: \$ _____.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the 20th day of each month during performance of the Work as provided in paragraphs 6.02.B thru 6.02.D below. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

B. The amount of the payment due the CONTRACTOR shall be determined by adding the total value of work completed to date and deducting of

1. Ten percent (10%) of the total amount, to be retained by the OWNER until the final payment, and
2. The amount of all previous payments.

The total value of work completed to date shall be based on the estimated quantities of work completed and on the unit prices contained in the agreement. The estimate may include the value of materials delivered on the ground but not incorporated into the work.

C. Monthly or partial payments made by OWNER to CONTRACTOR are monies advanced for the purpose of assisting CONTRACTOR to expedite the work of construction. The CONTRACTOR shall be responsible for the care and protection of all material and work upon which payments have been made until final acceptance of such work and materials by the OWNER. Such payments shall not constitute a waiver of the right of the OWNER to require the fulfillment of all terms of the agreement and the delivery of all improvements embraced in the agreement, complete and satisfactory to the OWNER in all details.

D. No estimate except the final estimate, will be made for a sum less than Five Hundred Dollars (\$500.00). It is understood that all estimates are approximate only and payment shall be subject to correction in subsequent estimates if any error is discerned.

6.03 Final Payment

A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 0 % per annum..

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.

F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.

H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

K. For the purpose of complying with the Texas Tax Code, this contract shall be a separate contract. The OWNER shall pay the CONTRACTOR for the proper performance of the contract, subject to additions and deductions therein, the contract sum as provided on the Bid Form.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. Instruction to Bidders (page 00200-1 to 00200-7, inclusive);
2. Bid Bonds (pages 00410-1 to 00410-2, inclusive);
3. This Agreement (pages 00500-1 to 00500-7, inclusive);
4. Performance Bond (pages 00610-1 to 00610-2, inclusive);
5. Payment Bond (pages 00620-1 to 00620-2, inclusive);
6. General Conditions (pages 00700-1 to 00700-41, inclusive);
7. Supplementary Conditions (pages 00800-1 to 00800-8, inclusive);
8. Special Supplementary Conditions (pages 00810-1 to 00810-7, inclusive);
9. Special Conditions (pages 00850-1 to 00850-4, inclusive);
10. Specifications as listed in the table of contents of the Project Manual;
11. Drawings consisting of a cover sheet and sheets numbered 1 through 10, inclusive, with each sheet bearing the following general title: 2012 Water and Sanitary Sewer Projects
12. Addenda (numbers ____ to ____, inclusive);
13. Exhibits to this Agreement (enumerated as follows):
 - a. Notice to Proceed (page 00550-1);
 - b. CONTRACTOR's Bid (pages 00300-1 to 00300-10, inclusive);
 - c. Documentation submitted by CONTRACTOR prior to Notice of Award (pages _____ to _____, inclusive);
14. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Written Amendments;
 - b. Work Change Directives;
 - c. Change Order(s).

B. The documents listed in paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 *Assignment of Contract*

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on _____, 2012 (which is the Effective Date of the Agreement).

OWNER: City of Leon Valley

CONTRACTOR:

By: _____

By: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest _____

Attest _____

Address for giving notices:

Address for giving notices:

City of Leon Valley

6400 El Verde

Leon Valley, Texas 78238

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement.)

License No. _____
(Where applicable)

Agent for service of process: _____

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Designated Representative:

Name: _____

Name: _____

Title: City Manager

Title: _____

Address: 6400 El Verde

Address: _____

Leon Valley, Texas 78238

Phone: (210) 684-1391

Phone: _____

Facsimile: (210) 681-7886

Facsimile: _____

**SECTION 00510
NOTICE OF AWARD**

Dated

TO: _____
(BIDDER)

ADDRESS: _____

Contract: _____ 2012 Water and Sanitary Sewer Projects _____
(Insert name of Contract as it appears in the Bidding Documents)

Project: _____ 2012 Water and Sanitary Sewer Projects _____

OWNER's Contract No. 2012-02 _____

You are notified that your Bid dated _____ for the above
Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract
for the entire project. _____

(Indicate total Work, alternates or sections or Work awarded)

The Contract Price of your Contract is _____
_____ Dollars (\$ _____).

4 copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of
Award. 4 sets of the Drawings will be delivered separately or otherwise made available to you
immediately.

You must comply with the following conditions precedent within 15 days of the date you receive this
Notice of Award.

1. Deliver to the OWNER 4 fully executed counterparts of the Contract Documents. Each of the
Contract Documents must bear your signature on the Notice to Award and the Agreement.
2. Deliver with the executed Contract Documents the Contract security (Bonds) as specified in the
Instructions to Bidders (Article 20), and General Conditions (paragraph 5.01).

3. (List other conditions precedent).

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Failure to comply with these conditions within the time specified will entitle OWNER to consider your Bid in default, to annul this Notice of Award and to declare your Bid security forfeited.

Within ten days after you comply with the above conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

City of Leon Valley
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

SECTION 00550
NOTICE TO PROCEED

Dated _____

TO: _____
(CONTRACTOR)

ADDRESS: _____

Contract: 2012 Water and Sanitary Sewer Projects
(Insert name of Contract as it appears in the Contract Documents)

Project: 2012 Water and Sanitary Sewer Projects

OWNER'S CONTRACT NO. 2012-02

You are notified that the Contract Times under the above contract will commence to run on _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement the date of Substantial Completion is _____ and the date of readiness for final payment is _____.

Before you may start any Work at the Site, paragraph 2.05.C of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must
(add other requirements)

Attend Preconstruction Conference and give Owner actual notice of start. Provide new Insurance certificate prior to expiration.

City of Leon Valley
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

Copy to ENGINEER

Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

*City of Leon Valley
6400 El Verde Road
Leon Valley, Texas
(210) 684-1391 ext. 222*

CONTRACT

Date:

Amount:

Description (Name and Location):

2012 Water and Sanitary Sewer Projects - City of Leon Valley

BOND

Bond Amount: 100%

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

(Corp. Seal)

SURETY

(Corp. Seal)

Company:

Company:

Signature: _____

Name and Title:

Signature: _____

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

(Corp. Seal)

SURETY

(Corp. Seal)

Company:

Company:

Signature: _____

Name and Title:

Signature: _____

Name and Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1. The Surety in accordance with the terms of the Contract;

3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied

liability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract.

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

*City of Leon Valley
Office of the Purchasing Agent
6400 El Verde Road
Leon Valley, Texas 78238
(210) 684-1391*

CONTRACT

Date:

Amount: \$

Description (Name and Location):

2012 Water and Sanitary Sewer Projects - City of Leon Valley

BOND

Bond Amount: 100%

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

(Corp. Seal)

SURETY

(Corp. Seal)

Company: ..

Company:

Signature: _____
Name and Title:

Signature: _____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

(Corp. Seal)

SURETY

(Corp. Seal)

Company:

Company:

Signature: _____
Name and Title:

Signature: _____
Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

- 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
- 2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

- 4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and
3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

- 6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
- 6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

6. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any

Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

SECTION 00700 STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

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This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or

Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other

CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by

OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum. fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished

by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the

Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non engineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. Day

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by

OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time

within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the

other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of

any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the

Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith

(except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and

ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

- a. reviewing and checking all such information and data,
- b. locating all Underground Facilities shown or indicated in the Contract Documents,
- c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and
- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract

Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price of Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable

belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for

all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required

by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 *Waiver of Rights*

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities

identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be

accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items*

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the

Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the

provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on

the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract

Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 Taxes

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the

Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 Safety and Protection

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws

and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto. CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken

by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. ENGINEER's Review

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR

from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. Resubmittal Procedures

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 Continuing the Work

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 CONTRACTOR's General Warranty and Guarantee

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective for a 12 month period beginning on the date of the final payment. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by

OWNER;

5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER, OWNER'S EMPLOYEES AND GOVERNING OFFICIALS, ENGINEER, ENGINEER'S CONSULTANTS, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other

individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 Related Work at Site

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between

OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph

4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special

inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract

Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written

Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of

the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which

case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in

the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee*: The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

- a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

12.02 Change of Contract Times

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract

in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or
2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors

performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having

jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If,

however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or

areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after

such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to pro-gress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the

Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any

examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Written Amendment or Change Orders;
- c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or
- d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. Reduction in Payment

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

- a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling OWNER to a

set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 CONTRACTOR's Warranty of Title

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after

submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and

request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. Review of Application and Acceptance

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 Final Completion Delayed

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining

balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND
TERMINATION

15.01 OWNER May Suspend Work

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 OWNER May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to

paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or

completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

SECTION 00800 SUPPLEMENTARY CONDITIONS

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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Construction Specifications Institute

This Guide to the Preparation of Supplementary Conditions has been prepared for use with the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition). Their provisions are interrelated and a change in one may necessitate a change in the other. The suggested language contained in the Guide to the Preparation of Instructions to Bidders (No. 1910-12, 1996 Edition) is also carefully integrated with the suggested language of this document. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50).

SECTION 0800

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SECTION 00800 - SUPPLEMENTARY CONDITIONS

ARTICLE 1- DEFINITIONS & TERMINOLOGY

SC-1.01 *Defined terms*

A. Whenever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *OWNER's Representative* – The OWNER's Representative shall be the OWNER as described in paragraph 1.010A.30 of the General Conditions and the ENGINEER as described in paragraph 1.010A.19 of the General Conditions.

SC-1.02 *Terminology*

No modifications to General Conditions

ARTICLE 2 - PRELIMINARY MATTERS

SC-2.01 *Delivery of Bonds*

No modifications to General Conditions

SC-2.02 *Copies of Documents*

OWNER shall furnish to CONTRACTOR up to two (2) copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

SC-2.03 *Commencement of Contract Times; Notice to Proceed*

No modifications to General Conditions.

SC-2.04 *Starting the Work*

No modifications to General Conditions

SC-2.05 *Before Starting Construction*

D. The CONTRACTOR shall be responsible for the notifying all property owners within and adjacent to the project twenty-four (24) hours prior to commencing construction operations. Said notice shall be in writing and in a form acceptable to the OWNER.

E. Prior to the start of the project, the CONTRACTOR shall identify to the OWNER, any tree limbs which overly and interfere with the work. Said limbs to be removed by the OWNER.

SC-2.06 *Preconstruction Conference*

The proposed project foreman must attend the Preconstruction Conference.

SC-2.07 *Initial Acceptance of Schedules*

No modifications to General Conditions

ARTICLE 3 - CONSTRUCTION DOCUMENTS; INTENT, AMENDING, REUSE

SC-3.01 *Intent*

No modifications to General Conditions

SC-3.02 *Reference Standards*

No modifications to General Conditions

SC-3.03 *Reporting & Resolving Discrepancies*

No modifications to General Conditions

SC-3.04 *Amending and Supplementing Contract Documents*

No modifications to General Conditions

SC-3.05 *Reuse of Documents*

No modifications to General Conditions

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

SC-4.01 *Availability of Lands*

D. The CONTRACTOR shall not, except after written consent from proper parties, enter or occupy with men, tools, materials or equipment, any privately owned land except on easements provided herein.

SC-4.02 *Subsurface and Physical Conditions*

A. In the preparation of Drawings and Specifications, ENGINEER relied upon the following report of explorations and tests of the subsurface conditions at the site:

None

SC-4.03 *Differing Subsurface or Physical Conditions*

No modifications to General Conditions

SC-4.04 *Underground Facilities*

No modifications to General Conditions

SC-4.04 *Reference Points*

No modifications to General Conditions

SC-4.06 *Hazardous Environmental Conditions*

No modifications to General Conditions

SC-4.07 *Damage to Existing Streets*

A. The asphalt pavement, curbs and existing sidewalks in the work area are considered to be in good to excellent condition prior to the start of the project.

B. Any scars, nicks, gasoline, oil, etc., or other defacement or damage to the existing streets, curbs, or sidewalks will be the responsibility of the CONTRACTOR to repair.

C. Before beginning the job, the CONTRACTOR may point out and note to the inspector any specific areas that are already damaged. Thereafter, the CONTRACTOR will not be held responsible for repairs to these areas.

ARTICLE 5 - BONDS AND INSURANCE

SC-5.01 Performance, Payment and Other Bonds

No modifications to General Conditions

SC-5.02 Licensed Sureties and Insurers

No modifications to General Conditions.

SC-5.03 Certificates of Insurance

The following types of insurance shall be furnished for the duration of the project and Certificates of Insurance extending the provisions listed below shall be furnished to ENGINEER prior to or at the time the contract is executed by CONTRACTOR and before a Notice to Proceed is issued:

A. Worker's Compensation

1. Definitions:

a. Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

b. Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

c. Person's providing services on the project ("subcontractor" in section 406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project.

"Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

2. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all employees of the contractor providing services on the project, for the duration of the project.

3. The contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

4. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

5. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

a. a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage for all persons providing services on the project; and

b. no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

6. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

7. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

8. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

9. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

a. provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all of its employees providing services on the project, for the duration of the project;

b. provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided services on the project for the duration of the project;

c. provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

d. obtain from each other person with whom it contracts, and provide to the contractor:

(1) a certificate of coverage, prior to the other person beginning work on the project; and

(2) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current coverage ends during the duration of the project;

e. retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

f. notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

g. contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.

10. By signing this contract or providing or causing to be a provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting or classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or civil actions.

11. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of the notice of breach from the governmental entity.

B. Automobile Liability Insurance with limits of:

- | | |
|------------------|------------------------|
| 1. Bodily Injury | \$250,000 per person |
| | \$500,000 per accident |

2. Property Damage \$300,000 per accident

3. The Insurance company must have as a minimum a current A.M. Best rating of A.

4. General Requirements for Insurance Coverage

a. The Certificate of Insurance furnished by the Contractor shall show by specific reference that each of the foregoing items have been provided for;

b. Certificates of Insurance required for each copy of the agreement which specifically set forth evidence of all required coverage will be filed with the City prior to the City's execution of the contract. Worker's Compensation Insurance coverage must be provided to the City prior to the City's award of the contract.

c. The Certificates of Insurance furnished by the contractor as evidence of the Insurance maintained by the contractor will include a clause obligating the Insurer to give the City of Leon Valley thirty (30) days prior written notice of cancellation or any material change in the insurance coverage.

d. Waiver of Subrogation: The City of Leon Valley and the Contractor waive all rights and the rights of their respective insurance companies against each other for damages caused by fire or other perils to the extent such damages are covered by property insurance purchased by either party.

C. Comprehensive General Liability endorsed to include blanket contractual coverage:

1. Bodily Injury - \$1,000,000 each occurrence.

2. Property Damage Liability - \$250,000 each occurrence ; \$250,000 aggregate.

3. This insurance shall:

a. Include completed operation coverage which is to be kept in force by the Contractor for a period of not less than one year after the completion of the work provided for or performed under these specifications;

b. Not be subject to any of the special property damage liability exclusions commonly referred to as the XCU exclusions pertaining to blasting or explosion, collapse, or structural damage and underground property;

c. Not be subject to any exclusion of property used by the insured or property in the case, custody or control of the insured or property as to which the insured for any purpose is exercising physical control;

d. The OWNER shall be named as an additional insured for the insurance coverage. In naming the OWNER as an additional insured on our comprehensive General Liability Insurance, the following words apply:

"Contractor shall defend, indemnify and hold harmless the City of Leon Valley from and against any liability, loss, cost and expense ("Liability") claimed by a third party (including reasonable attorney's fees and cost of defense) resulting from Contractor's performance of the Work to the extent that such Liability:

- 1) is attributable to bodily injury, sickness, disease or death, or to the injury to or destruction of tangible personal property; and,
- 2) is caused or contributed to by any neglect or fault of Contractor, its subcontractors, or their respective employees.

e. The Insurance company must have as a minimum a current A.M. Best rating of A.

f. Manufacturer's and Contractors' Liability insurance is not an acceptable substitute for Commercial Liability insurance.

D. When explosives are used, Comprehensive General Liability on an occurrence basis endorsed to include blanket contractual coverage:

1. In unpopulated areas:

- a. Bodily Injury - \$1,000,000 each accident
- b. Property Damage Liability - \$250,000 each accident; \$250,000 aggregate.

2. In populated areas: to be negotiated.

E. The OWNER shall be listed as the Certificate Holder, and the OWNER and the ENGINEER shall be named as Additional Insured in all coverage described in the above paragraphs except Worker's compensation.

F. Insurance and additional Insured requirements shall apply to and be enforced equally upon authorized subcontractors as well as the CONTRACTOR.

G. In the submission of the Certificate of Insurance, the insurance company in every case must agree to provide notice of cancellation of any insurance to the OWNER ten (10) days prior to such cancellation of policies covered by certificates.

SC-5.04 *CONTRACTOR's Liability Insurance*

See SC-5.03

SC-5.05 *OWNER's Liability Insurance*

No modifications to General Conditions.

SC-5.06 *Property Insurance*

A. All references to Owner furnished insurance shall be deleted from this item.

B. All references to Owner furnished insurance shall be deleted from this item.

SC-5.07 *Waiver of Rights*

A. All references to Owner furnished insurance shall be deleted from this item.

B. All references to Owner furnished insurance shall be deleted from this item

SC-5.08 *Receipt and Application of Proceeds*

No modifications to General Conditions.

SC-5.09 *Acceptance of Bonds and Insurance; Option to Replace*

No modifications to General Conditions.

SC-5.10 *Partial Utilization Acknowledgment of Property Insurer*

No modifications to General Conditions.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

SC-6.01 *Supervision and Superintendence*

No modifications to General Conditions.

SC-6.02 *Labor; Working Hours*

Work will be allowed by the CONTRACTOR during the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday. No work will be allowed before or after these hours, on Saturday, Sunday or OWNER holidays, unless approved by ENGINEER.

SC-6.03 *Services, Materials, and Equipment*

No modifications to General Conditions.

SC-6.04 *Progress Schedule*

No modifications to General Conditions.

SC-6.05 *Substitutes and "Or-Equals"*

No modifications to General Conditions.

SC-6.06 *Concerning Subcontractors, Suppliers, and Others*

No modifications to General Conditions.

SC6.07 *Patent fees and Royalties*

No modifications to General Conditions.

SC-6.08 *Permits*

No modifications to General Conditions.

SC-6.09 *Laws and Regulations*

No modifications to General Conditions.

SC-6.10 *Taxes*

No modifications to General Conditions.

SC-6.11 *Use of Site and Other Areas*

E. Street and Driveway Closing

1. After the CONTRACTOR has given the property owners not less than 24 nor more than 72 hours advance notice, he may close ½ of the driveway necessary for the day's operations. The CONTRACTOR will advise the Fire Marshall (684-3219) in advance of each closing. Suitable detour routes must be in place. At the end of each day, the closed driveway areas shall be reopened. All driveways must be accessible during the course of the work except for minimum periods and only after the CONTRACTOR has given property owners 24 hours notice. CONTRACTOR shall not start work that would keep driveways blocked during the weekends. In the event of inclement weather, the CONTRACTOR must maintain possible access to the owners.

F. Barricades and Flagmen

1. The CONTRACTOR is to provide himself with necessary temporary barricades and traffic cones sufficient to alert the traffic in advance. Where lanes of traffic are to be closed, suitable barricades, warning signs and markers are to be provided by the CONTRACTOR.

2. Barricades and traffic control devices shall follow the Texas Uniform Municipal Control Devices standards to the satisfaction of the OWNER.

3. The OWNER has the right to prevent work from starting until suitable traffic control devices are provided, in the opinion of the OWNER.

4. The OWNER may direct the CONTRACTOR to provide additional traffic control devices and/or flagmen as they deem necessary to protect the public. All barricades will have one flashing light at night. All costs for traffic management and barricades will be included in the cost of the work.

SC-6.12 *Record Documents*

No modifications to General Conditions.

SC-6.13 *Safety and Protection*

No modifications to General Conditions.

SC-6.14 *Safety Representative*

No modifications to General Conditions.

SC-6.15 *Hazard Communication Programs*

B. In compliance with Article 5182b, Texas Revised Civil Statutes, all employee are required to train and educate employees on the safe use and handling of hazardous materials that employees may be exposed to in the work place. The OWNER's Fire Chief is designated as the OWNER's HazComm Officer. Subcontractors of the CONTRACTOR are also required to comply with the requirements of the act

1. CONTRACTORS are entitled to a copy of the OWNER's workplace chemical list to which the CONTRACTOR, its employees and agents may be exposed to in the workplace.

2. CONTRACTORS are also entitled to a copy of the MSDS sheets for any hazardous chemicals which the OWNER may have in the work place. CONTRACTORS have the obligation to inform their employees and agents of all these requirements. Prior to the commencement of any work, the CONTRACTOR shall furnish the OWNER's HazComm Officer with the MSDS sheets for any hazardous chemicals brought into the OWNER's work-site that OWNER's employees will have exposure to. The CONTRACTOR shall sign the Attachment, (hazard Communications Contractor Acknowledgment) certifying receipt of this information.

SC-6.16 *Emergencies*

No modifications to General Conditions.

SC-6.17 *Shop Drawings and Samples*

CONTRACTOR shall submit to ENGINEER six (6) copies of all required shop drawings, layout drawings, manufacturer's data sheets and samples, as described herein.

SC-6.18 *Continuing the Work*

No modifications to General Conditions.

SC-6.19 *CONTRACTOR's General Warranty and Guarantee*

No modifications to General Conditions.

SC-6.20 *Indemnification*

No modifications to General Conditions..

ARTICLE 7 - OTHER WORK

SC-7.01 *Related Work at Site*

No modifications to General Conditions.

SC-7.02 *Coordination*

No modifications to General Conditions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

SC-8.01 Communications to CONTRACTOR

No modifications to General Conditions.

SC-8.02 Replacement of ENGINEER

No modifications to General Conditions.

SC-8.03 Furnish Material

No modifications to General Conditions.

SC-8.04 Pay Promptly When Due

No modifications to General Conditions.

SC-8.05 Lands and Easements; reports and Tests

No modifications to General Conditions.

SC-8.06 Insurance

No modifications to General Conditions.

SC-8.07 Change Orders

No modifications to General Conditions.

SC-8.08 Inspections

No modifications to General Conditions.

SC-8.09 Limitations on OWNER's Responsibilities

No modifications to General Conditions.

SC-8.10 Undisclosed Hazardous Environmental Condition

No modifications to General Conditions.

SC-8.11 Evidence of Financial Arrangements

No modifications to General Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

SC-9.01 OWNER's Representative

No modifications to General Conditions.

SC-9.02 Visits to Site

No modifications to General Conditions.

SC-9.03 Project Representative

No modifications to General Conditions.

SC-9.04 Clarifications and Interpretations

No modifications to General Conditions.

SC-9.05 Authorized Variations in Work

No modifications to General Conditions.

SC-9.06 Rejecting Defective Work

No modifications to General Conditions.

SC-9.07 Shop Drawings, Change Orders and Payments

No modifications to General Conditions.

SC-9.08 Determinations for Unit Price Work

No modifications to General Conditions.

SC-9.09 Decisions on Requirements of Contract Documents and Acceptability of Work

No modifications to General Conditions.

SC-9.10 Limitations on ENGINEER's Authority and Responsibilities

No modifications to General Conditions.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

SC-10.01 Authorized Changes in the Work

No modifications to General Conditions.

SC-10.02 Unauthorized Changes in the Work

No modifications to General Conditions.

SC-10.03 Execution of Change Orders

No modifications to General Conditions.

SC-10.04 Notifications to Surety

No modifications to General Conditions.

SC-10.05 Claims and Disputes

No modifications to General Conditions.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICES

SC-11.01 Cost of the Work

No modifications to General Conditions.

SC-11.02 *Cash Allowances*

No modifications to General Conditions.

SC-11.03 *Unit Price Work*

No modifications to General Conditions.

ARTICLE 12 - CHANGE OF CONTRACT PRICE;
CHANGE OF CONTRACT TIMES.

SC-12.01 *Change of Contract Price*

No modifications to General Conditions.

SC-12.02 *Change of Contract Times.*

No modifications to General Conditions.

SC-12.03 *Tests and Inspections*

No modifications to General Conditions.

SC-12.05 *Delays Within CONTRACTOR's Control*

No modifications to General Conditions.

SC-12.06 *Delay Damages*

No modifications to General Conditions.

ARTICLE 13 - TESTS AND INSPECTIONS;
CORRECTIONS, REMOVAL OR ACCEPTANCE OR
DEFLECTIVE WORK

SC-13.01 *Notice of Defects*

No modifications to General Conditions.

SC-13.02 *Access to Work*

No modifications to General Conditions.

SC-13.03

G. This work will be inspected by the City of Leon Valley. All change orders or communications concerning the work should be directed to Director of Public Works.

SC-13.04 *Uncovering Work*

No modifications to General Conditions.

SC-13.05 *OWNER May Stop Work*

No modifications to General Conditions.

SC-13.06 *Correction or Removal of Defective Work*

No modifications to General Conditions.

SC-13.07 *Correction Period*

No modifications to General Conditions.

SC-13.08 *Acceptance of Defective Work*

No modifications to General Conditions.

SC-13.09 *OWNER May Correct Defective Work*

No modifications to General Conditions.

ARTICLE 14 - PAYMENT TO CONTRACTOR AND
COMPLETION

SC-14.01 *Schedule of Values*

No modifications to General Conditions.

SC-14.02 *Progress Payments*

No modifications to General Conditions.

SC-14.03 *CONTRACTOR's Warranty of Tile*

No modifications to General Conditions.

SC-14.04 *Substantial Completion*

No modifications to General Conditions.

SC-14.05

No modifications to General Conditions.

SC-14.06 *Controlling Law*

No modifications to General Conditions.

SC-14.07 *Final Payment*

No modifications to General Conditions.

SC-14.08 *Final Completion Delayed*

No modifications to General Conditions.

SC-14.09 *Waiver of Claims*

No modifications to General Conditions.

ARTICLE 15 - SUSPENSION OF WORK AND
TERMINATION

SC-15.01 *OWNER May Suspend Work*

No modifications to General Conditions.

SC-15.02 *OWNER May Terminate for Cause*

No modifications to General Conditions.

SC-15.03 *OWNER May Terminate for Convenience*

No modifications to General Conditions.

SC-15.04 *CONTRACTOR May Stop Work or Terminate*

No modifications to General Conditions.

ARTICLE 16 - DISPUTE RESOLUTION

SC-16.01 *Methods and Procedures*

No modifications to General Conditions.

ARTICLE 17 - MISCELLANEOUS

SC-17.01 *Giving Notice*

No modifications to General Conditions.

SC-17.02 *Computation of Times*

No modifications to General Conditions.

SC-17.03 *Cumulative Remedies*

No modifications to General Conditions.

SC-17.04 *Survival of Obligations*

No modifications to General Conditions.

SC-17.05 *Controlling Law*

No modifications to General Conditions.

SC17.06 *Water for Construction*

A. All water required by the CONTRACTOR for his operations will be furnished without charge by OWNER at a point designated by the OWNER. The CONTRACTOR shall make all necessary connections, including valves and shall transport all water at his expense. If needed, the CONTRACTOR will be required to pay a deposit for a fire hydrant meter, which deposit will be returned when the fire hydrant meter is returned in good condition.

B. All water furnished by the City shall be subject to the regulations of the City regarding prevention of waste and water conservation.

SC-17.07 *Power for Construction*

A. The CONTRACTOR shall make his own arrangements for electric service and shall purchase all power required for his operation.

SC-17.08 *Telephone*

A. The CONTRACTOR may make his own arrangements for temporary telephone service during construction.

SC-17.09 *Sanitary Provisions*

A. The CONTRACTOR shall establish and enforce among his employee such regulations in regard to cleanliness and disposal of garbage and waste as shall tend to prevent the inception and spread of infectious or contagious diseases and to prevent effectively the creation of a nuisance about the work on any property either public or private; and such regulations as are required by the OWNER shall be put into immediate force and effect by the CONTRACTOR. The necessary sanitary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained by the CONTRACTOR in such a manner and at such points as shall be approved by the OWNER; and their use shall be strictly enforced by the CONTRACTOR. All sanitary laws and regulations of the State of Texas and the OWNER's jurisdiction shall be strictly complied with.

SECTION 00810

**SPECIAL
SUPPLEMENTARY
CONDITIONS**

TO

SPECIFICATIONS

FOR

2012 SANITARY SEWER AND WATER PROJECTS

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SECTION 00810

ARTICLE 1 - GENERAL STATEMENT

A. This is a 100% locally funded and competitively bid Public Works Contract and Article 5159a, Revised Civil Statutes of Texas, as amended, requires that not less than the general prevailing wage rates (minimum hourly base pay and minimum hourly fringe benefits contribution) for work of similar character be paid to CONTRACTOR and subcontractor employees. These local prevailing and adopted wage rates are derived from the most current applicable federal prevailing wage rates as published by the United States Department of Labor, Dallas, Texas pursuant to the original intent and authority of the City of Leon Valley Ordinance 99-001 passed by the City Council of the City of Leon Valley. Copies of both the current Ordinance and the wage rates are contained in the Special Conditions, and are included instruments of this Contract and full compliance with same shall be required.

1. Any deviation from Wage and Labor Standard Provisions compliance may be cause for City's withholding either interim or final payment to the CONTRACTOR until such deviations are properly corrected.

ARTICLE 2 - WAGE & HOUR OFFICE, PUBLIC WORKS, RESPONSIBILITIES

A. The City of Leon Valley Wage & Hour Monitor is primarily responsible for all Wage and Labor Standard Provisions investigation and enforcement and will monitor CONTRACTOR/subcontractors practices to assure the City Manager that:

1. Appropriate weekly compliance statements and payroll records are submitted to the City by the CONTRACTOR/subcontractors and that such are reviewed for compliance with Wage and Labor Standard Provisions.

2. Apprentices/trainees working on the project are properly identified by CONTRACTOR/subcontractor on payroll records and documented as being included in programs currently sanctioned by appropriate federal or state regulatory agencies.

3. Applicable Wage Determination Decisions, including any applicable modifications, and related statements are posted at the work-site by the CONTRACTOR and that proper job classifications and commensurate minimum hourly base and fringe wage rates are paid.

4. Employees are periodically interviewed (at random) on each project as required.

5. That no person employed by CONTRACTOR or

subcontractor is induced against his will, by any means, to give up any part of the compensation to which he is otherwise entitled.

6. That any and all periodic administrative directives to the Wage & Hour Monitor from the City Manager are being implemented.

ARTICLE 3 - CLAIMS & DISPUTES PERTAINING TO WAGE RATES

Claims and disputes not promptly and routinely settled by the CONTRACTOR/subcontractor and employees pertaining to wage rates, or to job classifications of labor employed upon the work covered by the Contract, shall be reported by the employee in writing, within 60 calendar days of employee's receipt of any allegedly incorrect classification, wage or benefit report, to the Wage & Hour Monitor, City of Leon Valley, for further investigation. Claims and disputes not reported by the employee to the City's Wage & Hour Monitor in writing within 60 calendar day period shall be deemed waived by the employee for the purposes of the City administering and enforcing the City's Contract rights against the CONTRACTOR on behalf of the employee. Waivers by the employee of this City intervention shall not constitute waivers by the City or employee to independently pursue contractual rights it has against the CONTRACTOR/subcontractor for breach of Contract and other sanctions available to enforce the Wage and Labor Standard Provisions.

ARTICLE 4 - BREACH OF WAGE & LABOR STANDARDS PROVISIONS

A. The City of Leon Valley reserves the right to terminate this Contract for cause if the CONTRACTOR/subcontractors shall knowingly and continuously breach, without timely restitution or cure, any of these governing Wage and Labor Standard Provisions. A knowing and unremedied proven violation of these Wage and Labor Standard Provisions may also be grounds for debarment of the CONTRACTOR/subcontractor from future City of Leon Valley contracts for lack of responsibility, as determined by the City of Leon Valley. Recurrent violations, whether remedied or not, will be considered by the City Manager when assessing the responsibility history of potential CONTRACTOR/subcontractor prior to a competitive award of future Public Work projects. The general remedies stated in this paragraph 4. above are not exhaustive and not cumulative, for the City reserves legal and contractual rights to others specific remedies outlined herein below and in other parts of this Contract and as are allowed by applicable City of Leon Valley Ordinances, State and Federal statutes.

ARTICLE 5 - EMPLOYMENT OF
LABORERS/MECHANICS NOT LISTED IN WAGE
DETERMINATION DECISION

In the event that a Contractor/subcontractor discovers that construction of a particular work element requires a certain employee classification and skill that is not listed in the wage determination decision contained in the original Contract Documents, Contractor/subcontractors will make prompt inquiry (before bidding, if possible) to the Wage and Hour Monitor identifying that class of laborers/mechanics not listed in the wage determination decision who are intended to be employed, or who are being employed, under the contract Using his best judgement and information resources available to him at the time, and any similar prior decisions, the City Manager, City of Leon Valley, shall classify said laborers/mechanics by issuing a special local wage determination decision to the Contractor or subcontractor, which shall be enforced by the Wage and Hour Monitor.

ARTICLE 6 - MINIMUM WAGE

A. All laborers/mechanics employed to construct the work governed by this Contract shall be paid not less than weekly the full amount of wages due (minimum hourly base pay and any applicable minimum hourly fringe benefit contribution for all hours worked, including overtime) for the immediately preceding pay period, computed at wage and fringe rates not less than those contained in the wage determination decision included in this Contract. Only payroll deductions as are mandated by state or federal law and those legal deductions previously approved in writing by the employee, or as are otherwise permitted by state or federal law, may be withheld by the CONTRACTOR/subcontractor.

B. Should the CONTRACTOR/subcontractor subscribe to fringe benefit programs for employees, such programs shall be fully approved by the City in adopting a previous United States Department of Labor decision on such fringe benefit programs or by applying DOL criteria, in rendering a local decision on the adequacy of the fringe benefit programs. The approved programs shall be in place at the time of City Contract execution and provisions thereof disclosed to the Wage and Hour Monitor, City of Leon Valley, for legal review prior to project commencement.

C. Regular CONTRACTOR/subcontractor contributions made to, or costs incurred for, approved fringe benefit plans, funds or other benefit programs that cover periods of time greater than the one week payroll period (e.g., monthly or quarterly, etc.) Shall be prorated by the CONTRACTOR/subcontractor on weekly payroll records to reflect the equivalent value of the hourly and weekly summary of fringe benefits per employee.

ARTICLE 7 - OVERTIME COMPENSATION ON
NON-FEDERALLY FUNDED PROJECTS

No CONTRACTOR/subcontractor contracting for any part of the non-federally funded Contract Work (except for work site related security guard services), which may require or involve the employment of laborers/mechanics, shall require or permit any laborer/mechanic in any seven (7) calendar day work period in which he/she is employed on such work, to work in excess of 40 hours in such work period, unless said laborer/mechanic receives compensation at a rate not less than one and one-half times the basic hourly rate of pay for all hours worked in excess of 40 hours in a seven (7) calendar day work period. Any applicable fringe benefits must be paid for straight time and overtime; however, fringe benefits are not included when computing the overtime rate.

ARTICLE 8 - PAYMENT OF CASH EQUIVALENT
FRINGE BENEFITS

A. The CONTRACTOR/subcontractor is allowed to pay a minimum hourly cash equivalent of any applicable minimum hourly fringe benefits listed in the wage determination decision, in lieu of the contribution of benefits to a permissible fringe benefit plan, for all hours worked, including overtime, as described in paragraph 6. above. An employee is not allowed to receive less than the minimum hourly basic rate of pay specified in the wage determination decision.

ARTICLE 9 - WORK CONDUCTED ON HOLIDAYS
– NON-FEDERALLY FUNDED PROJECTS

If a laborer/mechanic is employed in the normal course and scope of his or her work on the job site on New Year's Day, Martin Luther King Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, or Christmas Day, or the calendar days observed as such in any given year, work shall be paid for at a no less than one and one half times the regular minimum hourly base pay regardless of the total number of hours the laborer/mechanic has accumulated during the pay period.

ARTICLE 10 - UNDERPAYMENT OF WAGES OR
SALARIES

A. When a "full investigation" (as called for in and as construed under Article 5159a, Section 2, and as further generally described in an administrative directive to the City's Wage & Hour Monitor from the City Manager entitled "Conducting Wage and Labor Standards Investigations on 100% Locally-funded City Construction Project", as may be amended) evidences' underpayment of wages by CONTRACTOR or subcontractor to laborers/mechanics employed upon the work covered by the Contract, the City of Leon Valley, in addition to such other rights

as may be afforded it under State and/or Federal law and/or this Contract, shall withhold from the CONTRACTOR, out of any payments (interim progress and/or final) due the CONTRACTOR, so much thereof as the City of Leon Valley may consider necessary to secure ultimate payment by the appropriate party to such laborers/mechanics, of full wages required by the Contract, plus a possible penalty (See B. below). The amount so withheld, excluding any possible penalty to be retained by the City, may be disbursed at an appropriate time after "full investigation" by the City of Leon Valley, for and on behalf of the CONTRACTOR/subcontractor (as may be appropriate), to the respective laborers/mechanics to whom the same is due, or on their behalf to fringe benefit plans, funds, or programs for any type of minimum fringe benefits prescribed in the applicable wage determination decision.

B. Article 5159a, Revised Civil Statutes of Texas, as amended, states that CONTRACTOR shall forfeit as a penalty to the City of Leon Valley the sum of sixty dollars (\$60.00) for each calendar day, or portion thereof, for each laborer, workman, or mechanic, who is paid less than the said stipulated rate for any work done under this Contract whether by the CONTRACTOR himself, or by any subcontractor working under him. Pursuant to and supplemental of this statutory authority, the City of Leon Valley and the CONTRACTOR/subcontractor contractually acknowledges and agrees that said sixty dollars (\$60.00) a statutory penalty shall be construed by and between the City of Leon Valley and the CONTRACTOR/subcontractor as liquidated damages, and not as a penalty, and will apply to any violations of paragraph 6, 7 or 9 herein, resulting from CONTRACTOR/subcontractor underpayment violations.

C. If unpaid or underpaid workers cannot be located by the CONTRACTOR or the City after diligent efforts to accomplish same, unpaid or underpaid wages shall be reserved by the City in a special "unfound worker's account" established by the City of Leon Valley, for such employees. If after one (1) year from the final acceptance of the project by the City, workers still cannot be located, in order that the City can make effective interim re-use of the money, such wages, and any associated liquidated damages may be used to defray actual costs incurred by the City in attempting to locate said workers, and any remaining monies may then revert back to the City's original funding source for the project. However, unpaid or underpaid workers for whom money was originally reserved are eligible to claim recovery from the City for a period of not to exceed three (3) years from the final acceptance of the project by the City. Recovery after expiration of the three (3) year period is prohibited.

ARTICLE 11 - POSTING WAGE DETERMINATION DECISIONS AND NOTICE TO LABORERS'/ MECHANICS' STATEMENTS

A. The applicable wage determination decision as described in the "General Statement" (and as specifically included in each project contract), outlining the various workers' classifications and mandatory minimum wages and minimum hourly fringe benefits deductions, if any, of laborers/mechanics employed and to be employed upon the work covered by this Contract, shall be displayed by the CONTRACTOR/subcontractor at the site of work a conspicuous and prominent public place, readily and routinely accessible to workmen for the duration of the project. In addition, the CONTRACTOR/subcontractor agrees with the contents of the following statement, and shall display same, in English and Spanish, near the display of the wage determination decision at the site of work:

NOTICE TO LABORERS/MECHANICS

Both the City of Leon Valley and the CONTRACTOR/subcontractor agree that you must be compensated with not less than the minimum hourly base pay and minimum hourly fringe benefit contribution in accordance with the wage rates publicly posted at this job site, and as are applicable to the classification of work you perform.

Additionally, you must be paid not less than one and one-half times your basic hourly rate of pay for any hours worked over 40 in any seven (7) calendar day work period, and for any work conducted on New Year's Day, Martin Luther King Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day or the calendar days observed as such in any given year.

Apprentice and trainee hourly wage rates and ratios apply only to apprentices and trainees recognized under approved Federal, or State, apprenticeship training programs registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

If you believe that your employer is not paying the posted minimum wage for the type of work you do, you must make direct inquiry to the employer and inquire in writing, within 60 days calendar days of your receipt of any allegedly incorrect wage or benefit check or report, to the City of Leon Valley Wage & Hour Monitor, 6400 El Verde Road, San Antonio, Texas 78238.

It is mandatory that you promptly file written inquiry of any allegedly incorrect wage or benefit checks or reports with the City of Leon Valley Wage & Hour Monitor within the 60 calendar day period, so that you do not waive your potential right of recovery under the

provisions of the City of Leon Valley Public Works Contract that governs this project.

Both the City of Leon Valley and the CONTRACTOR/subcontractor agree that no laborer/mechanic who files a complaint or inquiry concerning alleged underpayment of wages or benefits, shall be discharged by the employer, or in other manner be discriminated against by the employer, for filing such complaint or inquiry.

ARTICLE 12 - PAYROLLS & BASIC PAYROLL RECORDS

A. The CONTRACTOR and each subcontractor shall prepare payroll reports in accordance with the "General Guideline" instructions furnished by the Wage & Hour Monitor of the City of Leon Valley. Such payroll submittals shall contain the name and address of each such employee, his correct labor classification, rate of pay, daily and weekly number of hours worked, any deductions made, and actual basic hourly and fringe benefits paid. The CONTRACTOR shall submit payroll records each week and no later than seven (7) working days following completion of the work week being processed to the Wage & Hour Monitor, City of Leon Valley. These payroll records shall include certified copies of all payrolls of the CONTRACTOR and of his subcontractors, it being understood that the CONTRACTOR shall be responsible for the submission and general mathematical accuracy of payroll from all of his subcontractors. Each such payroll submittal shall be on forms deemed satisfactory to the City's Wage & Hour Monitor and shall contain a "Weekly Statement of Compliance", as called for by the Contract Documents. Such payrolls will be forwarded to Public Works, Wage & Hour Monitor, City of Leon Valley, 6400 El Verde Road, San Antonio, Texas 78238.

B. Copies of payroll submittals and basic supporting payroll records of the CONTRACTOR/subcontractors accounting for all laborers/mechanics employed under the work covered by this Contract, shall be maintained by CONTRACTOR/subcontractor during the course of the work, and preserved for a period of three (3) years after completion of the project. The CONTRACTOR/subcontractor shall maintain records which demonstrate: any CONTRACTOR commitment to provide fringe benefits to employees as may be mandated by the applicable wage determination decision; that the plan or program is adjudged financially responsible by the appropriate approving authority, (i.e. United States Department of Labor, United States Department of Treasury, etc.); and that the provisions, policies, certificates, and description of benefits of the plan or program as may be periodically amended, have been clearly communicated

in a timely manner and in writing, to the laborers/mechanics affected prior to their performing work on the project.

C. The CONTRACTOR/subcontractor shall make the above records available for inspection, copying, or transcribing by authorized representatives of the City of Leon Valley at reasonable times and locations for purposes of monitoring compliance with this Contract.

ARTICLE 13 - LABOR DISPUTES

A. The CONTRACTOR/subcontractor shall immediately notify the City Manager or his designated representative of any actual or impending CONTRACTOR/subcontractor labor dispute which may affect, or is affecting, the schedule of the CONTRACTOR's or any other CONTRACTOR's or subcontractor's work. In addition, the CONTRACTOR/subcontractor shall consider all appropriate measures to eliminate or minimize the effect of such labor disputes on the schedule, including but not limited to such measures as: promptly seeking injunctive relief if appropriate; seeking appropriate legator equitable actions or remedies; taking such measures as establishing a reserved gate, as appropriate; if reasonable feasible, seeking other sources of supply or service; and any other measures that may be appropriately utilized to mitigate or eliminate the job site and scheduling effects of the labor dispute.

ARTICLE 14 - COMPLAINTS, PROCEEDINGS, OR TESTIMONY BY EMPLOYEES

A. No laborers/mechanics to whom the wage, salary, or other labor standard provisions of this Contract are applicable shall be discharged, or in any other manner discriminated against by the CONTRACTOR/subcontractors, because such an employee has filed any formal inquiry or complaint or instituted or caused to be instituted, any legal or equitable proceeding, or has testified, or is about to testify, in any such proceeding under or relating to the wage and labor standards applicable under this Contract.

ARTICLE 15 - EMPLOYEE INTERVIEWS TO ASSURE WAGE & LABOR STANDARD COMPLIANCE

A. CONTRACTOR/subcontractors shall allow expeditious job site entry of the City of Leon Valley Wage & Hour Monitor displaying and presenting proper identification credentials to the job site, the Wage & Hour Monitor shall observe all job site rules and regulations concerning safety, internal security and fire prevention. CONTRACTOR/subcontractors shall allow project employees to be separately and confidentially interviewed at random for a reasonable duration by the Wage & Hour Monitor to facilitate compliance determinations regarding adherence by the CONTRACTOR/subcontractor to these Wage and Labor

Standard Provisions.

ARTICLE 16 - "ANTI-KICKBACK" PROVISION

A. No person employed in the construction or repair of any City of Leon Valley Public Works Project shall be induced, by any means, to give up to any CONTRACTOR/subcontractor or public official or employee, any part of the hourly and/or fringe benefit compensation to which he or she is otherwise entitled.

ARTICLE 17 - "FALSE INFORMATION"

A. Any person employed by the CONTRACTOR/subcontractor in the construction or repair of any City of Leon Valley Public Works Project, who is proven to have knowingly and willfully falsified, concealed or covered up by any deceptive trick, scheme, or device a material fact, or made any false, fictitious or fraudulent statement or representation, or made or used any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be permanently removed from the job site by CONTRACTOR/subcontractor. The City of Leon Valley reserves the right to terminate this Contract for cause as a result of serious and uncured violations of this provision.

ARTICLE 18 - EMPLOYMENT OF APPRENTICES /TRAINEES

A. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed and individually registered in a bona fide apprenticeship program registered with the United States Department of Labor, Employment and Training Administration, Bureau of Apprenticeship & Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his first 90 days or probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship & Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeyman in any craft classification shall not be greater than the ratio under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not a trainee as defined in (b) below, or is not registered or otherwise employed as stated above, shall be paid the wage rate for the classification of work he actually performs. The CONTRACTOR/subcontractor is required to furnish to the Wage & Hour Monitor of the City of Leon Valley, a copy of the certification, along with the payroll record that the employee is first listed on. The wage rate paid apprentices shall not be less than the specified rate in the registered program for the

apprentice's level of progress expressed as the appropriate percentage of the journeyman's rate contained in the applicable wage determination decision.

B. Trainees will be permitted to work at less than the predetermined rate for the work performed when they are employed pursuant to an individually registered program which has received prior approval, evidenced by formal certification by the United States Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen shall not be greater than that permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress. Any employee listed on the payroll at a trainee wage rate, who is not registered and participating in a training plan approved by the Employment and Training Administration, shall be paid not less than the wage rate determined by the classification of the work he actually performs. The CONTRACTOR/subcontractor is required to furnish a copy of the trainee program certification, registration of employee-trainees, ratios and wage rates prescribed in the program, along with the payroll record that the employee is first listed on, to the Wage & Hour Monitor of the City of Leon Valley. In the event the Employment and Training Administration withdraws approval of a training program, the CONTRACTOR/subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved by the Employment and Training Administration.

C. Paragraphs 18.a. and b. above shall not operate to exclude training programs approved by the OFCCP, United States Department of Labor and as adopted by the Associated General CONTRACTORS (AGC) of Texas, Highway, Heavy, Utilities and Industrial Branch. Guidelines for these training programs shall be the same as those established for federally funded projects. This sub-paragraph 18.c. shall not apply to those portions of a project deemed to be building construction.

D. Ratios, Apprentice to Journeyman:

The ratio of Apprentice to Journeyman for this project shall be the same as the Ratio permitted under the plan approved by the Employment and Training Administration, Bureau of Apprenticeship and Training, United States Department of Labor, by craft. A copy of the allowable Ratios is included with the applicable Wage Determination Decision in the specifications for this project.

E. When a "full investigation" (as called for in, and construed under Article 5159a, Section 2, and as further generally described in an administrative directive to the City's Wage & Hour Monitor from the City Manager entitled "Conducting Wage

and Labor Standard Investigations on 100% Locally Funded City Construction Projects", as may be amended) evidences a violation of the Apprentice or Trainee to Journeyman ratios effective for CONTRACTOR/subcontractor employees working on this Contract, the City of Leon Valley, in addition to such other right as may be afforded it under State and/or Federal law and/or other sections of this Contract (especially paragraph 10 "Underpayment of Wages"), shall withhold from the CONTRACTOR, out of any payments (interim progress and/or final) due the CONTRACTOR, the liquidated damages (not a penalty) sum of seventy-five dollars (\$75.00) for each calendar day or portion thereof, for each certified Apprentice or Trainee employee assigned to a Journeyman that exceeds the maximum allowable Apprentice/Trainee to Journeyman ratio stipulated for any work done under this Contract, whether by the CONTRACTOR himself, or by any subcontractor working under him.

ARTICLE 19 - JOB SITE CONDITIONS

A. CONTRACTORs/subcontractors will not allow any person employed for the project to work in surroundings or under construction conditions which are unsanitary, unhealthy, hazardous, or dangerous as governed by industry standards and appropriate local, state and federal statutes, ordinances, and regulatory guidelines.

ARTICLE 20 - EMPLOYMENT OF CERTAIN PERSONS PROHIBITED

A. The CONTRACTOR/subcontractor shall knowingly only employ persons of appropriate ages commensurate with the degree of required skill, strength, maturity and judgement associated with the activity to be engaged in, but not in less than the age of 14 years, as governed by Chapter 51 "Employment of Children", Texas Labor code, (Vernon's Texas Code Annotated) (as may be amended), and Texas Department of Labor and Standards rulings and interpretations associated with that statute. It is hereby noted that in some circumstances generally governed by this section, a federal statute (see: Fair Labor Standards Act, 29 USCS Section 212; Volume 6A of the Bureau of National Affairs Wages Hour Manual at Paragraph 96:1; "Child Labor Requirements in Non-agricultural Occupations" WH Publication 1330, July 1978 as may be amended), could pre-empt the Texas Statute and therefore be the controlling law on this subject. The CONTRACTOR/subcontractor should seek classification from state and federal agencies and legal counsel when hiring adolescent employees for particular job classifications.

B. Prohibited persons not to be employed are also those persons who, at the time of employment for this Contract, are serving sentence in a penal or correctional institution, except that prior approval by the City Manager is required to employ any person

participating in a supervised work release or furlough program that is sanctioned by appropriate state and federal correctional agencies.

C. The CONTRACTOR/subcontractors shall be responsible for compliance with the provisions of the "Immigration Reform and Control Act of 1986" Public Law 99-603, and any related State enabling or implementing statutes, especially as they in combination apply to the unlawful employment of aliens and unfair immigration-related employment practices affecting this Contract.

ARTICLE 21 - PROVISIONS TO BE INCLUDED IN SUBCONTRACTS

A. The CONTRACTOR shall cause these Wage and Labor Standard Provisions, or reasonably similar contextual adaptations hereof, and any other appropriate state and federal labor provisions, to be inserted in all subcontracts relative to the work to bind subcontractors to the same Wage and Labor Standards as contained in these terms of the General Conditions and other contract documents insofar as applicable to the work of subcontractors or sub-tier subcontractors, and to give the CONTRACTOR similar, if not greater, general contractual authority over the subcontractor, or sub-tier subcontractors, as the City of Leon Valley may exercise over the CONTRACTOR.

ARTICLE 22 - GENERAL INDEPENDENT CONTRACTOR CLAUSE

A. This agreement does not create an employer relationship between parties. It is parties' intention that the CONTRACTOR will be an independent CONTRACTOR and not the City of Leon Valley employee for all purposes, including, but not limited to, the application of the Fair Labor Standards Act minimum wage and overtime payments, Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, Texas workers compensation law and Texas unemployment insurance law. The CONTRACTOR will retain sole and absolute discretion in the judgement of the manner and means of carrying out the CONTRACTOR's activities and responsibilities hereunder. The CONTRACTOR agrees that it is a separate and independent enterprise from the City of Leon Valley, that it has a full opportunity to find other business, that it has made its own investment in its business, and that it will utilize a high level of skill necessary to perform the work. This agreement shall not be construed as creating any joint employment relationship between the CONTRACTOR and the City of Leon Valley and the City of Leon Valley will not be liable for any obligation incurred by the CONTRACTOR, including, but not limited to unpaid minimum wages, and/or overtime premiums.

ARTICLE 23 - HOT GOODS CLAUSE

The CONTRACTOR hereby certifies that the execution of the work he will perform, that he will comply with all applicable provisions of Sections 6, 7 and 12 of the Fair Labor Standards Act of 1938, as amended, and that there will be no violations of the "hot goods" or "hot cargo" provisions of the Act involving restrictions on the use of the underage employees.

ARTICLE 24 - PROTECTION OF LIVES AND HEALTH

The CONTRACTOR shall comply with the U.S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (Public Law 91-596 and all subsequent amendments) and under Section 107 of the Contract Work Hours and Safety Standards Act (Public Law 91-54 and all subsequent amendments).

The CONTRACTOR shall have a competent person or persons, as required under the Occupational Safety and Health Act, on the site to inspect the work and to supervise the conformance of the CONTRACTOR's operations with the regulations of the Act.

This project is subject to all of the Safety and Health Regulations CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974, and CFR 29, Part 1910 and all subsequent amendments of General Industry Safety and Health Regulations identified as applicable to construction. CONTRACTORS are urged to become familiar with the requirements of these regulations.

ARTICLE 25 - ANTI-DISCRIMINATION IN EMPLOYMENT

A. The CONTRACTOR and/or any subcontractor(s), if permitted, certifies complete compliance with the Federal Civil Rights Law and the Americans with Disabilities Act, agreeing to nondiscrimination based on race, age, color, religion, disability, gender, ancestry, national origin, or place of birth in employment practices, programs and services shall include but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other compensation; and selection for training, including apprenticeship.

B. The CONTRACTOR shall in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, age, color, religion, disability, gender, ancestry, national origin, or place of birth.

**SECTION 00820
CONTRACTOR'S
DISCLOSURE STATEMENT**

All questions must be answered or your bid will be deemed non-responsive and subject to rejection. The data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The bidder may submit any additional information he desires.

1. The Bidders Disclosure Statement is submitted to the City of Leon Valley, Texas by:

____ a Corporation ____ a Partnership ____ a Texas Joint Venture ____ an Individual

Address: _____ Contractor's No.: _____

City: _____ State: _____ Zip Code: _____

2. Years in business under present business name: _____

3. Years of experience in construction work of type called for in this contract is:

A General Contractor _____ A Subcontractor _____

4. What projects has your organization completed? List most recent FIRST.

Contract Amount	Type of Work	Date Completed	Owner's Name and Address	Contact Telephone No.

5. What projects does your organization have underway as of this date?

Contract Amount	Type of Work	% Completed	Owner's Name and Address

6. Have you ever failed to complete any work awarded to you? ____ Yes ____ No. If
"Yes", state where and why. _____

7. Are you at present in any lawsuits involving construction work of any type?

____ Yes ____ No. If "Yes", explain:

8. If this contract is awarded to you, your company's office administrative manager for the work will be Mr. (Ms.) _____, and your resident construction superintendent will be Mr. (Ms.) _____

9. What experience in this type in this type of work does the individual designated above as resident superintendent have? _____

10. What portion of the work do you intend to subcontract? _____

11. What equipment do you own that is available for the proposed work?

Quantity	Description, Size Capacity, Etc.	Condition	Years in Service	Present Location

12. Have you received firm offers from suppliers or manufacturers for all major items of material and/or equipment within the price totals used in preparing your proposal?

____ Yes ____ No.

Credit Available: \$ _____ Bank Reference: _____

Bonding capacity available: \$ _____

The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Engineer and Owner in verification of the recitals comprising this Bidders Disclosure Statement.

The signatory of this questionnaire guarantees the truth and accuracy of all statements herein made and all answers herein expressed.

Date this _____ day of _____, 20 ____.

By: _____

Title: _____

STATE OF _____
COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 20 ____.

Notary Public

My commission expires: _____

**SECTION 00830
HAZARD COMMUNICATIONS
CONTRACTOR ACKNOWLEDGEMENT**

IT IS HEREBY UNDERSTOOD AND AGREED THAT _____,
a Contractor under contract dated the _____ day of _____, 20 _____, with the City of
Leon Valley has received from the City notice of the Contractor's rights under the Texas Hazards
Communications Act, the chemical list and material safety data sheets for hazardous chemicals that will
be present in the City work area. _____ Contractor with the City of
Leon Valley, understands our obligation to inform our employees and agents of the information provided.
Material safety data sheets have been received for the following chemicals.

CONTRACTOR NAME: _____
NAME OF AUTHORIZED AGENT: _____
TITLE OF AUTHORIZED AGENT: _____
SIGNATURE OF AUTHORIZED AGENT: _____
DATE: _____

SECTION 00840
PREVAILING WAGE RATES

SECTION 00840
PREVAILING WAGE RATE DETERMINATION

The following statute requires state agencies, cities, counties, independent school districts, and all other political subdivisions that engage in construction projects using public funds to include prevailing wage rates in the project bid documents and the construction contract.

**Article 5159a, Texas Civil Statutes, as amended by H.B. 560, Ch. 606, Acts,
73rd Legislature, Regular Session (1993)**

Pursuant to the requirements of this statute, the General Services Commission, Facilities Construction, has ascertained the following rates of wages are paid to various classifications of workers in the locality of this project.

Building construction wage rates shall be paid to all workers except those workers engaged in site work and construction beyond five feet of buildings.

Not less than the following hourly rates shall be paid for the various classifications of work required by this project. Workers in classifications where rates are not identified shall be paid not less than the general prevailing rate of "laborer" for the various classifications of work listed therein.

The hourly rate for legal holiday and overtime work shall not be less than one and one-half (1 & ½) times the base hourly rate.

The rates specified are journeyman rates. Apprentices may be used on the project and may be compensated at a rate determined mutually by the worker and employer, commensurate with the experience and skill of the worker but not at a rate not less than 60% of the journeyman's wage as shown. At no time shall a journeyman supervise more than one (1) apprentice. All apprentices shall be under the direct supervision of a journeyman working as a crew.

Welders shall receive the rate prescribed for the craft performing the operation to which the welding is incidental.

General Decision Number: TX120016 01/06/2012 TX16

Superseded General Decision Number: TX20100017

State: Texas

Construction Types: Heavy and Highway

Counties: Atascosa, Bandera, Bastrop, Bell, Bexar, Brazos, Burleson, Caldwell, Comal, Coryell, Guadalupe, Hays, Kendall, Lampasas, McLennan, Medina, Robertson, Travis, Williamson and Wilson Counties in Texas.

HEAVY (excluding tunnels and dams, not to be used for work on Sewage or Water Treatment Plants or Lift / Pump Stations in Bell, Coryell, McClennon and Williamson Counties) and HIGHWAY Construction Projects

Modification Number	Publication Date
0	01/06/2012

* SUTX2011-006 08/03/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures).....	\$ 12.56	
ELECTRICIAN.....	\$ 26.35	
FORM BUILDER/FORM SETTER		
Paving & Curb.....	\$ 12.94	
Structures.....	\$ 12.87	
LABORER		
Asphalt Raker.....	\$ 12.12	
Flagger.....	\$ 9.45	
Laborer, Common.....	\$ 10.50	
Laborer, Utility.....	\$ 12.27	
Pipelayer.....	\$ 12.79	
Work Zone Barricade Servicer.....	\$ 11.85	
PAINTER (Structures).....	\$ 18.34	
POWER EQUIPMENT OPERATOR:		
Agricultural Tractor.....	\$ 12.69	
Asphalt Distributor.....	\$ 15.55	
Asphalt Paving Machine.....	\$ 14.36	
Boom Truck.....	\$ 18.36	
Broom or Sweeper.....	\$ 11.04	
Concrete Pavement Finishing Machine.....	\$ 15.48	
Crane, Hydraulic 80 tons or less.....	\$ 18.36	
Crane, Lattice Boom 80 tons or less.....	\$ 15.87	

Crane, Lattice Boom over	
80 tons.....	\$ 19.38
Crawler Tractor.....	\$ 15.67
Directional Drilling	
Locator.....	\$ 11.67
Directional Drilling	
Operator.....	\$ 17.24
Excavator 50,000 lbs or	
Less.....	\$ 12.88
Excavator over 50,000 lbs...	\$ 17.71
Foundation Drill, Truck	
Mounted.....	\$ 16.93
Front End Loader, 3 CY or	
Less.....	\$ 13.04
Front End Loader, Over 3 CY.	\$ 13.21
Loader/Backhoe.....	\$ 14.12
Mechanic.....	\$ 17.10
Milling Machine.....	\$ 14.18
Motor Grader, Fine Grade....	\$ 18.51
Motor Grader, Rough.....	\$ 14.63
Pavement Marking Machine....	\$ 19.17
Reclaimer/Pulverizer.....	\$ 12.88
Roller, Asphalt.....	\$ 12.78
Roller, Other.....	\$ 10.50
Scraper.....	\$ 12.27
Spreader Box.....	\$ 14.04
Trenching Machine, Heavy....	\$ 18.48
Servicer.....	\$ 14.51
Steel Worker	
Reinforcing.....	\$ 14.00
Structural.....	\$ 19.29
TRAFFIC SIGNAL INSTALLER	
Traffic Signal/Light Pole	
Worker.....	\$ 16.00
TRUCK DRIVER	
Lowboy-Float.....	\$ 15.66
Off Road Hauler.....	\$ 11.88
Single Axle.....	\$ 11.79
Single or Tandem Axle Dump	
Truck.....	\$ 11.68
Tandem Axle Tractor w/Semi	
Trailer.....	\$ 12.81
WELDER.....	\$ 15.97

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

SECTION 00850

**SPECIAL
CONDITIONS**

TO

SPECIFICATIONS

FOR

2012 WATER AND SANITARY SEWER PROJECTS

WORK TO BE DONE

Replacing approximately 635 lf of 8' AC water mains and 1,180 lf of 6" AC water mains with PVC pipe, replacing or installing gate valves in 13 locations, replacing fire hydrants in nine locations and the replacement of approximately 392 lf of 8" clay sanitary sewer pipe with 8" PVC pipe, and one sanitary sewer point repair, all situated in various locations within the City of Leon Valley.

STATE SALES TAX

The City is an exempt entity for the purposes of sales tax.

The purchase of tangible personal property or a taxable service for this project is exempt from sales tax to the extent allowed by 34 Texas Administration Code 3.291 (See Instruction to Bidding).

Bidders must include all applicable taxes in the cost of his work.

WARRANTY

The Contractor shall warrant the work performed against defect in materials and workmanship for a period of one year after acceptance by the Owner. Warranty work will be performed by the Contractor within a reasonable time of notice given by the Owner reserves the right to make repairs at the Contractor's expense upon the failure of the Contractor to respond promptly. Repairs under the warranty will carry an additional 90-day warranty period. The Warranty period shall commence at the time the City has made final acceptance of the work done by the Contractor. The City will assume responsibilities for damage to the facility caused by misuse and vandalism after final acceptance.

MATERIAL SUBMITTAL

The Contractor will supply four copies of submittal data for approval prior to ordering any material for the project.

SANITARY FACILITIES

The Contractor shall provide on-site restroom facilities for the workers.

PRECONSTRUCTION CONFERENCE

The Contractor will be required to attend a preconstruction conference prior to initiation of the work.

The proposed project foreman must be in attendance at this conference.

PAYMENT SCHEDULE

Payment of this work will be made in partial payments for completed work in accordance with the General Conditions if Performance/Payment bonds are furnished. In the absence of bonding, the Contractor will receive one payment only 30 days after the City has accepted the project. If partial payment are made, the Contractor will furnish a schedule of the cost breakdown for prior approval.

STAKING FOR CONSTRUCTION

The Contractor will layout the facility using the information shown on the drawings, with the exception of those lines designated on the plans to be staked by the Engineer.

PRIORITY

Where conflicts are found between the Special Conditions or the General Conditions, the Special Conditions shall govern.

MATERIALS ON HAND

Materials on hand but not in place will not be paid for separately.

DELAYS CAUSED BY UTILITY ADJUSTMENTS

The Contractor is required to notify each utility company which has poles or underground facilities in conflict with the work. Delays caused by utility work shall be justification for time extensions, but not for extra compensation.

SCHEDULE OF WORK

At the Preconstruction Conference, the sequence of work will be proposed by the Contractor to the City and is subject to City approval. Work will be allowed from 7:30 a.m. to 6:00 p.m., Monday through Friday. No work on Saturday, Sunday, or City Holidays will be permitted.

SEQUENCE OF WORK

The Contractor shall proceed with work in a manner which completes the work in one area before advancing to another area.

The Contractor may have under construction several sites so as to be efficient, however, the sequence must proceed in an orderly manner to completion.

The Contractor's sequence must also include traffic flow consideration.

Sequences of work which do not include orderly progression through these stages before advancing to additional work areas will not be approved.

NOTIFICATION

It shall be the Contractor's responsibility to notify all property owners adjacent to the project 24 hours prior to the starting of construction operations. This notice shall be in writing in a form acceptable to the City. Additionally 48 hours prior to beginning work, notify the following departments: U.S. Post Office (210) 641-0248, N.I.S.D. Transportation (210) 695-3800, Waste Management Co. (210) 368-5005, Leon Valley Dispatch (210) 681-3215.

STREET CLOSING

The contractor is to properly barricade each segment of street to be worked on after giving property owners 24 hours notice. Barricades will not be set before 7:30 a.m. Each street shall be opened at the end of day.

BARRICADES AND FLAGMEN

The Contractor is to provide himself with necessary temporary barricades and traffic cones sufficient to alert the traffic in advance. If the present lanes of traffic are to be closed, suitable barricades, warning signs and markers are to be provided by the Contractor. Unless otherwise approved by the City, barricades for this work shall be provided by a barricade company familiar with the requirements of TMUTCD.

Barricades and traffic control devices including advance warning signs etc, shall follow the Texas Uniform Municipal Control Devices standards to the satisfaction of the City.

The City has the right to prevent work from starting until suitable traffic control devices are provided, in the opinion of the City. Included advance warning signs.

The City may direct the Contractor to provide additional traffic control devices and/or flagmen as they deem necessary to protect the public. All barricades will have one flashing light at night. All cost for traffic management and barricades will be included in the cost of the work.

WATER FOR CONSTRUCTION

All water required by the Contractor for his operations will be furnished without charge by the Owner at a point designated by the Owner. The Contractor shall make all necessary connections and shall transport all water at his own expense. If needed, the Contractor will be required to pay a deposit for a fire hydrant meter, which deposit will be returned when the fire hydrant meter is returned in good condition.

POWER FOR CONSTRUCTION

The Contractor shall make his own arrangements for electric service and shall purchase all power required for his operation.

BID QUANTITIES

The Owner may elect to increase or decrease the amount of work units authorized to be completed as much as 25% without affecting the unit price of the project. The Contractor agrees that the final contract amount will be computed by extension of these unit prices and the quantity of work authorized and accepted by the Owner.

UTILITY AND SIGN ADJUSTMENT

The City of Leon Valley shall remove and relocate all street and traffic signs as needed. The contractor shall request this service in advance of his need.

INSPECTION

This work will be inspected by the City and all change orders or communication concerning the work shall be directed to the City.

CONTRACT TIME

The contract time will commence to run on the 15th day after the Notice of Award is issued and the contract documents are made available to the Contractor for execution.

DATE OF AGREEMENT

The date of the award of the contract will be the date of the agreement.

DAMAGE TO EXISTING STREETS

The asphalt pavement, curbs and existing sidewalks in the work area are considered to be in good to excellent condition prior to start of the project.

Any scars, nicks, gasoline, oil, etc., or other defacement or damage to the existing streets, curbs or sidewalks will be a responsibility of the contractor to repair.

Before beginning the job, the contractor may point out and note to the inspector any specific areas that are already damaged. Thereafter, the contractor will not be held responsible for repairs to these areas.

CONDITION OF THE SITE

Site of the proposed work will be pointed out to the prospective bidders by the City Public Works Director. The Contractor shall provide his own material and equipment yard at his cost. Upon completion of the work, all excess materials shall be removed from the site by the Contractor and the area around the work shall be returned to its original condition. Disposal sites will be a responsibility of the Contractor.

PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor shall, at all times, safely guard the Owner's property from injury or loss in connection with this Contract. He shall at all times safely guard and protect his own work and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such is caused directly by errors contained in the Contract, or by the Owner or his duly authorized representatives.

The Contractor shall take all necessary precautions for the safety of employees on the work and shall comply with all applicable provisions of Federal, State and Municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public, and shall post danger signs warning against the hazards created by such features of construction as protruding nails, hoists, well holes, elevator hatchways, scaffolding, window openings, stairways, trenches and other excavations, and falling materials, and he shall designate a responsible member of his organization on the work site

whose duty shall be the prevention of accidents. The name and position of any person so designated shall be reported to the Owner by the Contractor. The person so designated shall be available by phone during non-working hours.

In case of an emergency which threatens loss or injury of property and/or safety of life, the Contractor will be allowed to act without previous instructions from the Owner in a diligent manner. He shall notify the Owner immediately thereafter.

CARE AND PROTECTION OF PROPERTY

The Contractor expressly undertakes at his own expense: To assume full responsibility for the preservation of all public and private property and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar to or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the Owner. No representations are made concerning the conditions, locations or state of repair of existing sewers, drains, water mains and other underground structures;

To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other contractor;

To provide suitable storage facilities for all materials which are liable to injury by exposure to weather, theft, breakage or otherwise;

To place upon the work, or any part thereof, only such loads as are consistent with safety of that portion of the work;

To clean up frequently all refuse, rubbish, scrap materials and debris caused by his operations to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;

To remove all surplus material, false work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations and to put the site in a neat, orderly condition before final payment; to effect all cutting, fitting or patching of his work required to make the same conform to the plans and specifications and, except with the

consent of the Owner, not to cut or otherwise alter the work of any other contractor.

The Contractor shall not, except after written consent from proper parties, enter or occupy with men, tools, materials or equipment, any privately owned land except on easements provided herein.

PROTECTION OF LIVES AND HEALTH

The Contractor shall comply with the U.S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (Public Law 91 - 596 and all subsequent amendments) and under Section 107 of the Contract Work Hours and Safety Standards Act (Public Law 91-54 and all subsequent amendments).

The Contractor shall have a competent person or persons, as required under the Occupational Safety and Health Act, on the site to inspect the work and to supervise the conformance of the Contractor's operations with the regulations of the Act.

This project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974, and CFR 29, Part 1910 and all subsequent amendments of General Industry Safety and Health Regulations identified as applicable to construction. Contractors are urged to become familiar with the requirements of these regulations.

PROJECT CONSTRUCTION SITE

The contractor shall provide his own temporary yard for stock pile of materials and storage of vehicle. City property is not available for this purpose.

TECHNICAL SPECIFICATIONS

ITEM NO. 100
MOBILIZATION

100.1 **DESCRIPTION:** This item shall govern the mobilization of personnel, equipment and supplies at the project site in preparation for beginning work on other contract items. Mobilization shall include, but is not limited to, the movement of equipment, personnel, material, supplies, etc. to the project site and the establishment of office and other facilities necessary prior to beginning the work.

100.2 **MEASUREMENT:** Measurement of the Item, "Mobilization," as specified herein, will be by the "Lump Sum", as the work progress.

100.3 **PAYMENTS:** Partial payments of the "Lump Sum" bid for mobilization will be as follows: (The adjusted contract amount for construction items, as used below, is defined as the total contract amount less the lump sum bid for Mobilization.)

1. When 1% of the adjusted contract amount for construction items is earned, 50% of the total contract amount, whichever is less, will be paid.
2. When 5% of the adjusted contract amount for construction items is earned, 75% of the mobilization lump sum bid or 10% of the total contract amount, whichever is less, will be deducted from the above amount.
3. When 10% of the adjusted contract amount for construction items is earned, 90% of the mobilization lump sum bid or 15% of the total contract amount, whichever is less, will be paid. Previous payments under this item will be deducted from the above amount.
4. Upon completion of all work under this contract, payment for the remainder of the lump sum bid for "Mobilization" will be made.

The total cost of Mobilization shall not exceed 10% of the sum of all other items bid. Cost for Insurance and Bond is inclusive to cost of Mobilization Item.

ITEM NO. 200

FLEXIBLE BASE

GENERAL: This item shall govern a foundation course for surfacing, pavement, or other base courses in conformity with the typical sections shown on the plans and to the lines and grades as established by the Engineer.

MATERIAL: The material shall be crushed as necessary to meet the requirements hereinafter specified, and shall consist of durable stone crushed and/or screened to the required particle size, with or without other approved fine-sized material. The material shall be from approved sources.

Testing of flexible base materials shall be in accordance with the following TXDOT standard laboratory test procedures:

Preparation for Soil Constants and Sieve Analysis	Tex-101-E
Liquid Limit	Tex-104-E
Plastic Limit	Tex-105-E
Plasticity Index	Tex-106-E
Linear Shrinkage	Tex-107-E
Sieve Analysis	Tex-110-E
Los Angeles Abrasion	ASTM C131 (Grade A)

Samples for testing the material shall be taken prior to the compaction operations.

The material shall be well graded and, when properly tested, shall meet the following requirements:

Retained on 1-3/4 inch sieve	0%
Retained on No. 4 sieve	45 to 75 %
Retained on No. 40 sieve	60 to 85 %

The material passing the No. 40 sieve shall be known as Soil Binder and shall meet the following requirements:

Liquid Limit shall not exceed	40
Plasticity Index shall not exceed	12

The crushed stone shall have an abrasion of not more than forty (40) when subjected to the Los Angeles Abrasion Test.

CONSTRUCTION METHODS: The flexible base material shall be placed on the approved subgrade in courses not to exceed 6-inches (152 mm) compacted depth. It shall be the responsibility of the Contractor that the required amount of material be delivered and uniformly spread and shaped. All material shall be moved from the place where it is dumped by cutting into windrows. It shall be sprinkled, spread, shaped, and rolled in proper sequence to prevent segregation and as necessary for required compaction.

The surface upon completion shall be smooth and in conformity with typical sections and to the established lines and grades. Any deviation in excess of 1/4-inch (6 mm) in cross section and in length of 16-feet (4.9 m) measured longitudinally shall be corrected. All irregularities, depressions, or weak spots which develop shall be corrected.

Flexible base shall be compacted to an apparent dry density of not less than 95 percent of the maximum dry density as determined in accordance with TXDOT Test Method Tex 113-E. Test for density will be made within 24 hours after compaction operations are completed. If the material fails to meet the density specified, it shall be reworked as necessary to meet the required density. Just prior to the placing of any succeeding course of flexible base or surfacing on a previously completed course, the density and moisture of the top 3-inches (76 mm) of flexible base shall be checked and if test show the density to be more than 2 percent below the specified minimum or the moisture content to be more than 3 percent above or below the optimum, the course shall be reworked as necessary to obtain the specified compaction and moisture content.

MEASUREMENT & PAYMENT: No direct measurement or payment will be made for "Flexible Base" but shall be considered subsidiary to the particular items requiring Flexible Base by the plans and contract.

ITEM NO. 300
CONCRETE (NATURAL AGGREGATE)

300.1 DESCRIPTION: This item shall govern the material used; storing and handling of materials; and the proportioning, mixing and transportation of concrete for all concrete construction.

This specification does not cover the placement, consolidation, curing, or protection of the concrete.

300.3 MATERIAL: The concrete shall be composed of Portland Cement, mineral filler, if necessary, natural aggregates (fine and coarse), and water, proportioned and mixed as hereinafter provided in these specifications. Concrete shall meet all the requirements as set forth in ASTM C-94.

300.3 CLASSIFICATIONS AND PROPORTIONS: The minimum cement content, maximum allowable water content, and maximum slump of the various classes of concrete shall conform to Table 1.

300.4 MEASUREMENT AND PAYMENT: No direct measurement or payment will be made for Concrete but shall be considered subsidiary to the particular items required by the plans and the contract.

Table 1				
Class	Minimum compressive strength @ 28 days psi	Maximum water/cement ratio	Slump range inches	Min.-max. sacks cement per cubic yard
A	3,000	7	2-5	5
B	2,500	8	2-5	4.5

ITEM NO. 410

SUBGRADE FILLER

410.1 DESCRIPTION: This item shall consist of furnishing and placing materials for purposes of stabilizing subgrades in trenches or excavations for manholes, or as bedding or as instructed by the Inspector, where quicksand, muck or other unstable material is encountered and the Inspector deems the measures provided herein warranted .

410.2 CLASSES: The subgrade fillers shall be Gravel Subgrade Filler

410.3 MATERIALS:

Gravel: Gravel subgrade filler shall be composed of well graded, crushed stone or gravel, approved by the Engineer, one hundred percent (100%) passing a one and a half inch (1-1/2") sieve, ninety-five percent (95%) to one hundred percent (100%) passing a one inch (1") sieve, twenty-five percent (25%) to sixty percent (60%) passing a three-eighths inch (3/8") sieve, zero percent (0%) to (10%) passing a No. 4 sieve, and zero percent (0%) to five percent (5%) passing a No. 8 sieve.

410.4 CONSTRUCTION METHODS: Where the soil encountered in the subgrade for a trench or manhole at established footing or pipe bearing grade is unstable material, the Inspector may order its removal to any depth deem necessary and replacement with the filler specified above. Where ordered by the Inspector, the following procedures shall govern:

Gravel subgrade filler will be used to replace wet subgrade or other unstable materials regarded as unsatisfactory for support of the structure involved. In such cases, subgrade material shall be removed to such depth below the established footing or bearing elevation as may be ordered. The soil removed shall be replaced with gravel or crushed stone as subgrade filler, placed in uniform layers of suitable depth as directed by the Inspector.

Gravel subgrade filler will be used as bedding materials for trenches and manholes, as described in the plans and specifications relating to these items. Gravel subgrade filler will also be placed along the sides of new manholes, and will be used as initial select backfill in trenches.

410.5 MEASUREMENT: Subgrade filler, in place in accordance with these specifications, complete and accepted, will be measured for payment by the cubic yard of material in place. Subgrade filler not authorized by the Owner will not be paid for separately.

410.6 PAYMENT: Payment for the subgrade filler will be made at the contract unit price bid respectively for "Gravel Subgrade Filler". Such price shall include full compensation for and disposal of materials below the established subgrade levels and the furnishing and placing of the subgrade materials.

ITEM NO. 500
REMOVE & REPLACE CONCRETE CURBING

500.1 DESCRIPTION: This item shall govern for removal and replacement of Portland cement concrete curbing with or without reinforcing steel as required, in accordance with this specification and in conformity with the lines, grades, section and details shown on the plans, or as established by the Engineer.

500.2 MATERIAL:

1. Concrete: All concrete shall conform to the provisions of Item 300, "Concrete (Class A)" of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision.

2. Reinforcing Steel: All reinforcing steel shall conform to the provisions of Item 301, "Reinforcing Steel", of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision.

3. Expansion Joint Materials: All expansion joint material shall conform to the provisions of Item 304, "Expansion Joint Materials" of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision.

4. Membrane Curing Compound: All membrane curing compound shall conform to the provisions of Item 305, "Membrane Curing", of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision

500.3 CONSTRUCTION METHODS: Removal and construction of concrete curbing shall be in accordance with the requirements of Item 103, "Remove Concrete" and Item 500, "Concrete Curbing", of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision

500.4 MEASUREMENT: Removal and replacement of concrete curbing will be measures by the linear foot of removed, constructed and accepted curb, regardless of installation method used.

500.5 PAYMENT: This item will be paid for at the contract unit price for "Remove & Replace Concrete Curbing", which price shall be full compensation for all work herein specified, including removal and disposal of the existing curb, furnishing of materials, including dowel bars and expansion joints and for all materials, equipment, tools, labor, manipulations and incidentals necessary to complete the work.

ITEM NO. 516

SODDING

516.1 GENERAL: This item shall govern for the furnishing and planting of Bermuda, St. Augustine, Buffalo 609 or other acceptable grass sod on the areas designated on the plans or as directed by the Engineer. All planting shall be completed as soon as practical to avoid erosion of topsoil and graded areas in advance of acceptance of the work.

516.2 MATERIALS: The sod shall consist of live, growing grass secured from sources where the soil is fertile. All grass sod shall have a healthy, virile root system of dense, thickly matted roots throughout the soil of the sod for a minimum thickness of 1 inch. The contractor shall not use sod from areas where the grass is thinned out, nor where the grass roots have been dried out by exposure to air and sun to such an extent as to damage its ability to grow when transplanted. The sod shall be free from obnoxious weeds or other grasses and shall not contain any matter deleterious to its growth or which might affect its subsistence or hardness when transplanted. Sources from which sod is to be obtained shall be subject to approval by the Engineer.

516.3 CONSTRUCTION METHODS:

1. General. After the designated areas have been completed to the lines, grades, and cross sections shown on the plans and as provided for in other items of the contract, sodding of the type specified on the plans or as designated by the inspector, shall be performed in accordance with the requirements herein described.

Where rolling is specified by the following sub-articles, the roller shall be a light corrugated drum roller.

2. Watering. Sod shall be thoroughly watered immediately after planting and subsequently at such intervals to promote growth or as directed by the Inspector.

3. Fertilizing. A pelleted or granulated fertilizer shall be used with an analysis of 16-8-8. (The figures in the analysis represent the percent of nitrogen, phosphoric acid, and potash nutrients respectively.)

The fertilizer shall be applied uniformly over the sodded areas and in the manner directed. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of fertilizer for the particular item of work shall meet the approval of the Inspector. Unless otherwise indicated on the plans, fertilizer shall be applied uniformly at the average rate of 300 pounds per acre for all types of sod..

4. Finishing. All areas to be planted shall be smoothed after planting has been completed and shaped to conform to the lines and grades that existed prior to the start of construction.

5. Block Sodding. At the locations shown on the plans or where directed by the Inspector, sod blocks shall be carefully placed on the prepared areas. The fertilizer shall then be applied and thoroughly watered.. When sufficiently dry, the sodded area shall be rolled or tamped to form a thoroughly compacted, solid mat. Any voids left in the block sodding shall be filled with additional sod and tamped.

6. Sequence of Sodding. It is the intent of this specification that all sodding be placed and watered twice a week, unless intervening rains make watering unnecessary. Watering shall be required for at least thirty (30) days after planting to establish growth or until acceptance by the City. All areas shall be covered with live sod before final acceptance. Any blocks which show no signs of life shall be replaced with live sod before the work shall be measured for payment.

516.4 MEASUREMENT: Measurement of acceptable "Sodding", complete in place, will be by the square yard. Fertilizer and water will not be measured for payment.

516.5 PAYMENT: "Sodding" will be paid for at the contract unit price bid per square yard, which price shall be full compensation for furnishing, hauling and placing materials, for all fertilizer and water required and for all labor, tools, equipment and incidentals necessary to complete the work.

ITEM NO. 502
REMOVE & REPLACE CONCRETE PAVEMENTS

502.1 DESCRIPTION: This item shall govern for removal and replacement of Portland Cement pavement, to include concrete pavement, rip-rap, sidewalks and driveways, in conformity to the lines and grades shown on the plans or as established by the Engineer.

502.2 MATERIAL:

1. Concrete: All concrete shall conform to the provisions of Item 300, "Concrete (Class A)" of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision.

2. Reinforcing Steel: All reinforcing steel shall conform to the provisions of Item 301, "Reinforcing Steel", of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision. Welded wire flat sheets will not be allowed.

3. Expansion Joint Materials: All expansion joint material shall conform to the provisions of Item 304, "Expansion Joint Materials" of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision.

4. Membrane Curing Compound: All membrane curing compound shall conform to the provisions of Item 305, "Membrane Curing", of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision

502.3 CONSTRUCTION METHODS: Removal and construction of concrete pavements shall be in accordance with the requirements of Item 103, "Remove Concrete" and Item 502 "Concrete Sidewalks and Driveways", of the City of San Antonio *Standard Specifications for Public Works Construction*, latest revision

502.4 MEASUREMENT: Removal and replacement of concrete pavements will be measured by the square yard of surface area of concrete.

502.5 PAYMENT: This item will be paid for at the contract unit price for "Remove and Replacement of Concrete Pavements", which price shall be full compensation for all work herein specified, including removal and disposal of the existing concrete, furnishing of materials, including dowel bars and expansion joints and for all materials, equipment, tools, labor, manipulations and incidentals necessary to complete the work.

ITEM NO. 530

BARRICADES, SIGNS, & TRAFFIC HANDLING

- 530.1 DESCRIPTION:** This item shall govern for providing, installing, moving, repairing, maintaining, cleaning and removing upon completion of work, all barricades, signs, cones, lights and other such type devices and of handling traffic as indicated on the plans or as directed by the Owner's Representative.
- 530.2 MATERIAL:** The Barricade Contractor must locally maintain sufficient materials in stock to accommodate three or more construction phases per project. These will include all applicable traffic control sign types, trucks, trailers, arrow boards, and all other traffic control devices assigned to the contractor's barricading operation.

The Texas Manual of Uniform Traffic Control Devices, Section 6A-6, requires the appropriate training for all personnel who are involved in the selection, placement, and maintenance of traffic control devices on construction projects. The Owner requires that all personnel associated with barricading operations process certificates from either of the two groups below. Each certificate will be valid for four years.

Table 1
Barricading Training

Texas Engineering Extension Service	American Traffic Safety Service Association
Work Zone Traffic Control	Training Course for Worksite Traffic Supervisors

The Contractor shall have a minimum of one barricade supervisor and three persons who are responsible for construction work zone traffic control. These persons shall be based in the San Antonio metropolitan area and their sole tasks shall be implementing and maintaining construction work zone traffic control devices.

The Contractor shall have a commercial telephone answering service during non-working hours. The Contractor shall provide the Owner, during working hours, with an office telephone number, pager number, and cellular telephone number to contact the barricading supervisor. The Contractor must be able to respond to any call within two hours.

The Barricading Contractor or General Contractor must possess liability insurance in the minimum amount of one million dollars. A copy of the liability policy must be sent to the Owner for approval 48 hours prior to starting barricading operations.

The Contractor must maintain weekly inspection reports and a monthly night inspection report for review by the Owner's Representative. The Contractor shall comply with all standards set forth in the Owner's barricade detail sheets. One non-compliance letter issued by the Owner to the Contractor in regard to construction work zone traffic control, and not corrected within 48 hours, will be cause for delay of payment for this item.

If the General Contractor elects to do his own barricading, he must comply with all the foregoing requirements. Additionally, a General Contractor will be required to submit a traffic plan at least 72 hours in advance (excluding weekends and holidays) of starting work in each construction phase. Upon satisfactory evidence of competent barricading expertise, this requirement for a traffic plan may be waived by the Owner.

530.3 CONSTRUCTION METHODS: All barricades, signs, and other types of devices listed above shall conform to the requirements of the TMUTCD. It is the Contractor's responsibility to see that all traffic control devices are properly installed and maintained at the job site. If it is determined by the Owner that the traffic control devices do not conform to the established standards, or are incorrectly placed to protect the general public, the Owner's Representative shall have the option to stop the work, at no expense to the Owner, until the situation is corrected by the Contractor. If it is determined that additional temporary traffic control devices, special directional devices, and/or business name signs are required, they will be provided by the Contractor at no additional cost. As work progresses, the location of temporary traffic control devices will be adjusted and modified as necessary by the Contractor.

All retro-reflective traffic control devices such as barricades, vertical panels, signs, etc., shall be maintained by cleaning, replacing or a combination thereof such that during darkness and rain, the retro-reflective characteristics shall equal or exceed the retro-reflective characteristics of the standard reflective panels in the Owner's Representative's possession.

The Contractor shall contact the Owner prior to removing any traffic signs or traffic signals. Prior to completion of the contract and removal of barricades, all applicable permanent traffic signs and signals must be in place and functioning properly. All permanent signs or traffic control devices missing or damaged during construction shall be replaced at the Contractor's expense. Permanent pavement markings shall be applied prior to the opening of any street to traffic. Temporary short-term expendable pavement markings may be provided prior to application of permanent markings.

The Contractor must maintain all streets open to through traffic by repairing trenches, potholes, etc., at no direct payment. The Contractor shall provide reasonable access to

residences and all businesses within all phases of the work, as well as providing suitable access accommodations for emergency vehicles, school children, pedestrians, garbage pick-up and mail delivery by the U.S. Postal Service.

530.4 MEASUREMENT AND PAYMENT: No direct measurement or payment will be made for Barricades, Signs and Traffic Handling but shall be considered subsidiary to the particular items required by the plans and the contract.

ITEM NO. 550
TRENCH EXCAVATION SAFETY PROTECTION

- 550.1 GENERAL:** This item shall govern the Trench Excavation Safety Protection required for the construction of all trench excavation protection systems to be utilized in the project and including all additional excavation and backfill necessitated by the protection system.
- 550.2 DESCRIPTION:** A trench shall be defined as a narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less (measure at the bottom of the excavation), the excavation is also considered to be a trench. In addition, "Trench Excavation Protection" will not be limited to these applications, but may be used whenever deemed expedient and proper to ensuing work.
- 550.3 CONSTRUCTION:** Trench Excavation Safety Protection shall be accomplished as required by the most recent provisions of Part 1926, Subpart P - Excavations, Trenching, and Shoring of the Occupational Safety and Health Administration (OSHA) Standards and Interpretations, as may be amended.
- 550.4 MEASUREMENT:** Trench Excavation Safety Protection shall be measured by the linear foot (meter) along the centerline of any OSHA defined trench that may be entered by personnel and is not greater than 15 feet wide, including manholes and other structures.
- 550.5 PAYMENT:** Payment for Trench Excavation Safety Protection, measured as prescribed above, shall be made at the unit price bid per linear foot of Trench Excavation Safety Protection regardless of the depth of the trench.

Payment shall include all components of the Trench Excavation Safety Protection System which can include, but not be limited to, sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or temporary diversion and proper recapture and transportation of water to provide adequate drainage. Payment shall also include the additional excavation and backfill required, any jacking, jack removal, and removal of the trench supports after completion.

Payment of all work prescribed under this item shall be full compensation for all additional excavation and backfill associated with the item; for any retention by Contractor of structural design/geotechnical/safety/equipment consultant; for furnishing, placing and removing all shoring, sheeting, or bracing; for dewatering or temporary diversion and proper recapture and transportation of water; for all jacking and jack removal; and for all other labor, material, tools, equipment and incidentals necessary to complete this portion of the work.

ITEM NO. 800
BASE AND PAVEMENT REPLACEMENT

800.1 DESCRIPTION: This item shall govern the removal and replacement of bases and/or pavements as herein specified and in conformity with the typical sections as shown on the plans.

800.2 MATERIAL:

1. Prime Coat: All prime coat (MC-30 or approved alternate) shall conform to the provisions of Item No. 300, "Asphalts, Oils, and Emulsions", and Item No. 310, "Prime Coat (Cutback Asphaltic Material)", of the current Texas Department of Transportation specifications.

2. Tack Coat: All tack coat (RC-250 or approved alternate) shall conform to the provisions of Item No. 300, "Asphalts, Oils, and Emulsions" of the current Texas Department of Transportation specifications.

3. Hot Mix Asphaltic Concrete Pavement: All hot mix asphaltic concrete pavement shall be Type D Fine-Grade Surface Course and shall conform to the provisions of Item No. 340, "Hot Mix Asphaltic Concrete Pavement", of the current Texas Department of Transportation specifications.

4. Asphalt Treated Base: All asphalt treated base shall be Type A Course-Grade Base Course and shall conform to the provisions of Item No. 340, "Hot Mix Asphaltic Concrete Pavement", of the current Texas Department of Transportation specifications

800.3 CONSTRUCTION METHODS:

1. Removal of Pavements: All asphaltic concrete pavements shall be cut with a concrete saw or other approved equally capable equipment. The depth of the cut shall be such that upon removal of asphaltic concrete, the sides of the cut will be straight and square.

2. Removal of Bases: Removal of bases shall be unclassified, and shall include all materials encountered regardless of their nature or the manner in which they are removed. It is the intent of this specification that the base shall be removed in a manner that will leave the sides of the cut straight and square.

a. Concrete Bases: Concrete bases shall be removed by means of approved pneumatic pavement breakers and cutting bits. Where reinforcement is encountered in concrete bases, a minimum of one foot shall be cleaned of all old concrete and left in place to tie into the new reinforcement in the new concrete base.

b. Flexible, Asphalt Treated, and Cement stabilized bases: A rock saw or other approved equally capable equipment shall be used to cut the materials to the depth as specified. The base materials may then be removed by normal trenching operations. The cut edges of the existing pavement shall be vertical, straight and uniform.

3. Subgrade: The subgrade shall be shaped in conformity with the typical sections shown on the plans and to the lines established by the Engineer by the removal of existing material or addition of approved material. All unstable or otherwise objectionable material shall be removed from the subgrade and replaced with approved materials. All holes, ruts, and depressions shall be filled with approved material. The surface of the subgrade shall be finished to the lines and grade as established, and be in conformity with the typical sections shown on the plans. Any deviation in excess to ½ inch in cross section and in length of 16 feet measured longitudinally shall be corrected by loosening, adding, or removing material, reshaping and compacting by sprinkling and rolling. Sufficient subgrade shall be prepared in advance to insure satisfactory prosecution of the work.

All material required for completion of the subgrade shall be subject to approval by the Inspector.

Subgrade materials shall be compacted by approved mechanical tamping equipment to an apparent dry density of the total material of not less than 90 percent of the maximum dry density as determined in accordance with TXDOT Test Method Tex-113-E.

4. Replacement of Materials: Replacement materials shall be of the type and thickness as shown on the plans.

Asphalt Treated Bases and Hot Mix Asphaltic Concrete Pavements: All new asphalt treated base shall be furnished, placed and compacted in accordance with Item No. 340 of the current Texas Department of transportation specifications. Asphalt Treated Base shall be placed in minimum lifts of 4 inches.

Pavements shall be replaced with hot mix asphaltic pavement which shall be furnished and placed in accordance with Item No. 340 of the current Texas Department of Transportation specifications. Asphaltic mixtures shall be at a temperature between 225 degrees F and 350 degrees F, when placed. When the temperature of the asphaltic mixtures falls below 200 degrees F, the mixture shall be rejected and payment will not be made for the rejected material.

Asphalt treated bases shall be primed with asphalt or emulsion in accordance with the provisions of Item No. 300 and 310 of the current Texas Department of Transportation specifications prior to the placement of the hot mix asphaltic concrete. All exposed asphalt treated base shall receive a tack coat of asphalt or emulsion in accordance with

the provisions of Item No. 300 of the current Texas Department of Transportation specifications prior to placement of new hot mix asphaltic concrete pavement.

MEASUREMENT: “Trench Pavement Replacement” will be measured by the square yard of base and pavement replaced, of the type and depth indicated on the plans and bid proposal, to the limits shown on the plans, regardless of the types of materials encountered upon removal. Materials used in replacing bases and pavements such as asphaltic concrete pavement, asphalt treated base, prime coat, and tack coat will not be measured directly for payment. The depth will be measured from the top of the pavement to the bottom of new base or pavement material.

“Pavement Replacement Other Than Trench Pavement Replacement” will be measured by the square yard of pavement replaced, of the type and depth of the existing pavement, to the limits agreed to by the owner, regardless of the types of materials encountered upon removal. Materials used in pavements such as asphaltic concrete pavement, prime coat, and tack coat will not be measured directly for payment.

PAYMENT: Payment of the base and pavement replacement will be made at the contract unit price bid per square yard for “Trench Pavement Replacement” of the type and depth classification shown on the plans. The contract unit price bid for “Trench Pavement Replacement” shall be considered a full compensation for cutting and removing pavements, removing bases, preparing subgrade, replacing with new bases and pavements, removing and disposing of all surplus materials, furnishing and placing new materials, and for all manipulations, work, tools, equipment, labor and incidentals necessary to complete the work.

Payment of the base and pavement replacement will be made at the contract unit price bid per square yard for “Pavement Replacement Other Than Trench Pavement Replacement” of the type and depth classification shown on the plans. The contract unit price bid for “Pavement Replacement other Than Trench Pavement Replacement” shall be considered a full compensation for cutting and removing pavements, preparing replacing with new pavements, removing and disposing of all surplus materials, furnishing and placing new materials, and for all manipulations, work, tools, equipment, labor and incidentals necessary to complete the work.

ITEM NO. 804
EXCAVATION, TRENCHING AND BACKFILL

804.1 DESCRIPTION: This section shall govern the excavation, trenching, and backfilling for water main and sanitary sewer construction, unless otherwise noted on the plan details and the specifications. The work shall include all necessary drainage, pumping, bailing, sheeting, shoring and incidental construction. All existing utilities shall be protected from damage during the excavation and backfilling of trenches and, if damaged, shall be replaced by the Contractor at his expense. Unless otherwise shown on the plans, proposal, or contract documents, all excavation shall be unclassified and shall include all materials encountered regardless of their nature or the manner in which they are removed.

804.2 EXCAVATION: The Contractor shall perform all excavation of every description and of whatever substances encountered to the lines and grades shown on the plans or determined by the Engineer. During excavation, material suitable for backfilling shall be stockpiled in orderly manner a sufficient distance from banks of the trench to avoid overloading and to prevent slides or cave ins. All excavated materials not required or suitable for backfill shall be removed and properly disposed of by the Contractor or as directed by the Engineer. Grading shall be done as may be necessary to prevent surface water from flowing into trenches or other excavations, and any water accumulating therein shall be removed by pumping or by other approved methods.

Sheeting and shoring shall be installed in accordance with safety requirements for the protection of the work, adjoining property, and for the safety of the personnel. Unless otherwise indicated, excavation shall be by open cut. Short sections of a trench may be tunneled, if in the opinion of the Engineer representing the Owner, the pipe or structure can be safely and properly installed or constructed, and backfill can be properly compacted in such tunnel sections.

1. Blasting: Blasting will not be permitted.
2. Provide and maintain barricades, flags, torches, and other safety devices as required by local, state, and federal codes and ordinances and conduct work to create a minimum inconvenience to the public. Temporary suspension of work does not relieve responsibility for the above requirements.

3. The Contractor shall at all times conform to all applicable regulations of Subpart "P" entitled "Excavation, Trenching, and Shoring of OSHA Safety and Health Regulations for Construction"; and all applicable state and local rules and regulations.

804.3

TRENCHING:

1. Trench walls shall be vertical and the practice of undercutting at the bottom or flaring at the top will not be permitted except where it is justified for safety or at the Engineer's direction. In special cases where trench flaring is required, the trench walls shall remain vertical to a depth of at least one foot (1') above the top of the pipe.

The trench bottom shall be square or slightly curved to the shape of the trenching machine cutters. The trench shall be accurately graded along its entire length to provide uniform bearing and support for each section of pipe on undisturbed soil. Bell holes and depressions for joints shall be dug after the trench bottom has been graded. The pipe shall rest upon the prepared bottom for as nearly its full length as practical.

Where over-excavation occurs, the under-cut trench shall be restored to grade at no cost to the Owner by replacement with a material conforming to the requirements of the bedding material or a material approved by the Engineer..

Whenever wet or otherwise unstable soil that is incapable of properly supporting the structure or pipe is encountered in the bottom of the trench, such soil shall be removed and the trench backfilled to the proper grade with a material conforming to the requirements of the bedding material or a material approved by the Engineer.

The depth of cut indicated on cut sheets, as furnished by the Engineer, is from the off-set or cut hub elevation to the invert.

Minimum Width of Trench. The minimum width of pipe trenches, measured at the crown of the pipe, shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of bells. The minimum base width of such trench shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of special structures or connections. Such minimum width shall be exclusive of trench supports and not greater than the width at the top of the trench.

Maximum Width of Trench. The maximum allowable width of trench for pipelines measured at the top of the pipe shall be the outside diameter of the pipe (exclusive of bells or collars) plus inches. A trench wider than the outside diameter plus 24 inches may be used without special bedding if the Contractor, at his expense, furnishes pipe of the required strength to carry

additional trench load. Such modifications shall be submitted to the Owner and approved in writing. Whenever such maximum allowable width of trench is exceeded, except as provided for on the drawings, or in the specifications, or by the written approval of the Owner, the Contractor, at his expense, shall cradle the pipe in concrete, or other pipe bedding material approved by the Owner.

It shall be understood that the depth of cut as indicated on the cut sheet for pay purposes may be more or less than the actual excavated depth based on the surface elevation prior to the Contractor's operation and the invert of the sewer line.

2. If unsuitable bearing materials such as water, silt, muck, trash, debris or rock in ledge, boulder or coarse gravel (particle size larger than 1-3/4 inch) is encountered at the bearing level, the Contractor shall over-excavate and remove such materials to a depth no less than six inches (6") below the bottom of the pipe and replace with a material conforming to the requirements of Paragraph 804.4.2.a, 804.5, or as approved by the Engineer.
3. Dewatering. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.
 1. Do not allow water to accumulate in excavations or at subgrade level. Remove water to prevent softening of foundation bottoms and soil changes detrimental to stability of subgrades and foundations. Provide and maintain dewatering system components necessary to convey water from excavations.
 2. Convey water removed from excavations and rainwater to collecting or runoff areas away from buildings and other structures. Establish and maintain temporary drainage ditches and other diversions outside excavation limits. Do not use trench excavations as temporary drainage ditches.
 3. Dewatering devices shall be provided with filters to prevent the removal of fines from the soil. Should the pumping system draw fines from the soil, the Owner shall order immediate shutdown, and remedial measures will be the responsibility of the Contractor.
 4. Upon completion of the dewatering work, the Contractor shall remove all equipment and leave the construction area in a neat, clean, and acceptable condition.
 5. Maintain ground water table at least 12 inches below the finished excavation subgrade.

Dewatering Performances. Performance of the dewatering system for lowering ground water shall be measured by observation wells on piezometers installed in conjunction with the dewatering system, and these shall be read at least daily. The Contractor shall maintain a log of these readings and submit them to the Owner.

804.4

BACKFILLING SANITARY SEWER TRENCHES:

1. General: Trenches shall not be backfilled until the construction structures or appurtenances, as installed, conform to the requirements specified. Where specified, backfilling may incorporate excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand and gravel, soft shale or other approved materials, free from large clods of earth or stones. Where pipe is specially coated for protection against corrosion, care shall be taken not to damage the coating.

Where a trench has been improperly backfilled, or where settlement occurs, the identified section shall be excavated to the depth and length required, then refilled and compacted to the grade and compaction. The use of sand backfill shall not be allowed. All compaction within the secondary backfill zone shall be such that the apparent dry density of each layer shall be not less than ninety percent (90%) within 2' of top of pavement, with the top 2' being not less than ninety-five percent (95%) for pavement areas of the maximum dry density at + or - 2% optimum moisture content as determined by tests on samples as outlined in Texas Highway Department Testing Method Tex 113-E, unless otherwise shown on the plans. At the time of compaction, the water content shall be at optimum moisture content, plus or minus two (2) percentage points.

See Table 1 at the end of this specification for an outline of the bedding and initial backfill requirements for various pipe types.

2. Sanitary Sewer Backfilling: Backfill for sanitary sewers is divided into three (3) separate zones: (a) bedding: the material in trench bottom in direct contact with the bottom of the pipe; (b) initial backfill: the backfill zone extending from the surface of the bedding to a point one foot (1') above the top of the pipe; and (c) secondary backfill: the backfill zone extending from the initial backfill surface to the top of the trench. Materials and placement for each of the zones shall be as described herein.

- a. Bedding:

- (1) Stable Material: Existing stable material present during excavation include:

Trench bottom free of water, muck, debris;

Rock in boulder, ledge or coarse gravel (particle size not larger than 1-3/4 inch) formations;

Coarse sands and gravels with maximum particle size of 1-3/4 inch, various graded sands and gravels containing small percentages of fines, generally granular and non-cohesive either wet or dry; and

Fine sands and clayey gravels, fine sand, sand-clay mixtures, clay and gravel-clay mixtures.

- (2) Unstable Material: Existing unstable materials are: Silt, muck, trash or debris in the trench bottom bearing level; rock, in ledge or boulder, or coarse gravel (minimum particle size larger than 1-3/4 inch) formations.
- (3) Bedding Material: The existing material at the bearing level shall be removed and replaced to a minimum depth of six inches (6") or one-eighth (1/8) of the outside diameter of the pipe, whichever is greater, with bedding material. The bedding material shall be composed of well graded, crushed stone or gravel conforming to the following requirements unless modified by the Engineer.

<u>Sewer Gravel</u>	<u>Percent</u>
Passing 1-1/2 inch sieve	100
Passing 1 inch sieve	95 to 100
Passing 3/8 inch sieve	25 to 60
Passing No. 4 sieve	0 to 10
Passing No. 8 sieve	0 to 5

Payment for additional excavation must be approved by the Inspector.

- (4) Over Excavation: Where the trench bottom has been over excavated beyond the limits as defined in Item 848, "Sanitary Sewers," due to blasting or removal of unstable material, the pipe shall be concrete encased. Encasement shall extend from the trench wall to trench wall and be a minimum of six inches (6") above the top of pipe. No separate pay item.
- (5) Reduced Excavation: Where the trench bottom is not excavated in accordance with the specification due to rock or

other hard under lying materials, then the pipe shall be concrete encased as defined in Item 858, "Concrete Encasement and Cradles."

- b. Initial Backfill: Initial backfill is defined as backfill having a thickness in its compacted state from the surface of the bedding to a point one foot (1') above the top of the pipe.

Initial backfill shall consist of gravel which conforms to the requirements of Paragraph 804.4.2.a.(3).

For sewer lines up to inches (24") in diameter initial backfill material shall be placed in two (2) lifts. The first lift shall be spread uniformly and simultaneously on each side and under the bottom quadrant of the pipe to the mid-point of the pipe.

Placement of the first lift of initial backfill shall be inspected and approved prior to placement of the second lift. The second lift shall extend from the spring line of the pipe to a minimum of one foot (1') above the top of the pipe. The second lift shall be evenly spread in a similar manner as the first lift..

- c. Secondary Backfill: Secondary backfill is defined as backfill from one foot (1') above the top of the pipe to the top of the trench (for natural areas), or to the bottom of the base material (for paved areas). Secondary backfill shall be constructed in accordance with details shown on the plans and these specifications.

Secondary backfill for trenches under sidewalks or in street pavement areas or alleys subject to vehicular traffic or areas within three feet(3') of the edge of the pavement shall consist of flowable backfill or flexible base compacted in 8" lifts at optimum moisture content to 90% proctor density within natural areas or within 2' of the top of pavement, with the top 2' in paved areas being compacted to 95% proctor density. Secondary backfill for trenches in natural areas or easements greater than three feet (3') from the edge of pavement may consist of flowable fill or of materials removed from the trench. Materials removed from the trench shall be free of brush, debris and trash, and shall have no rock or stones having any dimension larger than six inches (6"). Materials that are removed from the trench and used as secondary backfill shall be primarily composed of compactible soil materials, and this secondary backfill material shall be placed in maximum eight (8") lifts or as directed by the Engineer.

804.5

DISPOSAL OF EXCAVATED MATERIALS: Any excess excavated material, not utilized after all fill requirements have been met, shall become the responsibility of the Contractor. He shall dispose of it by hauling and wasting outside the limits of the right-of-way of this project and of public thoroughfares and water courses, in conformity with pertinent City, County, State, and Federal codes and ordinances and in a manner meeting the approval of the Engineer.

804.6

QUALITY CONTROL:

1. The Contractor shall procure, store, and place materials from either onsite or offsite sources which comply with the specified requirements.
2. Quality Assurance Testing: The Owner shall have such tests and inspections as he may desire performed by a nationally-accredited, independent testing laboratory for his guidance and control of the work. Payment for such tests shall be the responsibility of the Owner, with the exception of material proctor tests and density tests which shall be paid for by the Contractor. The Contractor shall cooperate with testing work performed by the Owner by providing access to the test area, associated trench excavation safety protection, and backfilling of the test areas at the Contractor's expense. The frequency and location of testing shall be determined solely by the Owner. The Owner may test any lift of fill at any time, location, or elevation.
3. Quality Control Testing. The Contractor shall be responsible for compaction testing. The Contractor shall be responsible for all costs associated with obtaining soil required for performing material proctor and density tests. These tests shall be performed by a nationally-accredited, independent testing laboratory. The Contractor shall submit the results of the material proctor tests to the Owner prior to performing any backfill operations.

The Contractor shall provide access to the test area, associated trench excavation safety protection, and backfilling of the test areas at the Contractor's expense.

804.7

MEASUREMENT: Excavation, Trenching and Backfill will not be measured for payment.

804.8

PAYMENT: No direct payment shall be made for incidental costs associated with quality control testing, excavation, trenching and backfilling for water mains and sanitary sewers, and all costs in connection therewith shall be included in the applicable contract price for the item to which the work pertains.

Over excavation and select fill required as approved by the Inspector in unstable conditions shall be paid at the contract unit price provided for over excavation and select bedding required for trenches (Item No. 410).

TABLE I
BEDDING AND INITIAL BACKFILL REQUIREMENTS

	UNSTABLE		STABLE*		ROCK	
	Bedding	Initial Backfill	Bedding	Initial Backfill	Bedding	Initial Backfill
WATER	6"	1.0' above pipe	6"	1.0'	6"	1' above pipe
CSC	modified grade 5	modified grade 5	modified grade 5	modified grade 5	modified grade 5	modified grade 5
DI	modified grade 5	modified grade 5	modified grade 5	modified grade 5	modified grade 5	modified grade 5
PVC	modified grade 5	modified grade 5	modified grade 5	modified grade 5	modified grade 5	modified grade 5
SEWER	6"	1.0' above pipe	6"	1.0'	6"	1.0'
RIGID	sewer gravel	sewer gravel	sewer gravel	sewer gravel	sewer gravel	sewer gravel
FLEXIBLE	sewer gravel	sewer gravel	sewer gravel	sewer gravel	sewer gravel	sewer gravel

* When the native materials encountered are a clean sand, this material may be utilized for bedding and initial backfill at the Engineer's direction.

Modified Grade 5 --- rounded rock

 --- See Specification Section 804.5.1 for gradation

Sewer Gravel --- See Specification Section 804.4.2.a(3)

ITEM NO. 812
WATER MAIN INSTALLATION

812.1 **DESCRIPTION:** This item shall consist of Water Main Installation in accordance with these specifications and as directed by the Engineer.

812.2 **MATERIALS:** The materials for "Water Main Installation" shall conform to the specifications contained within the latest revision of SAWS Material Specifications Item 05-12, "PVC C-900 Water Pipe". Minimum pressure rating shall be 200 psi.

812.3 **CONSTRUCTION:**

1. Start of Work: The Contractor shall start his work at a tie-in or point designated by the plans. Pipe shall be laid with bell ends facing in the direction of laying, unless otherwise authorized or directed by the Owner. All valves and fire hydrants must be installed as soon as pipe laying reaches their established location. Pipe shall be installed to the required lines and grades with fittings, valves, and hydrants placed at the required locations. Spigots shall be centered in bells or collars, all valves and hydrant stems shall be set plumb, and fire hydrant nozzles shall face as shown on the plans or as directed by the Owner. No valve or other control on the existing system shall be operated for any purpose by the Contractor unless a representative of the San Antonio Water System is present.
2. Crossing Other Underground Lines: New water mains crossing any other utilities shall have a minimum of 30 inches of cover over the top of the pipe unless otherwise waived or modified by the Owner. Excavation around other utilities shall be done by hand for at least twelve (12) inches all around. Any damage to the protective wrap on gas lines or electrodes shall be reported immediately to C. P. S. Energy, phone (210) 353-3333. Any damage to other utilities shall be reported to proper governing entity.
3. Pipe Grade: Water mains shall have a minimum of forty-eight (48) inches of cover over the top of the pipe unless otherwise waived or modified by the Engineer. Pipe grades shall be as required by the plans or as directed by the Engineer. Grades shall be met as specified by Item No. 804, "Excavation, Trenching and Backfilling." Care shall be taken to insure that the pipe barrel has uniform contact with the cushion material for its full length except at couplings. The couplings shall not be in contact with the original trench

bottom prior to backfilling. Cushion material shall be placed under the coupling and compacted by hand prior to backfilling so as to provide an even bearing surface under the coupling and pipe. Changes in grade shall be made only at joints.

4. Cushion and Cushion Materials: Prior to placing pipe in a trench, the trench shall have been excavated to the proper depth as required in Item No. 804, "Excavation Trenching and Backfilling," of these specifications. Approved imported materials or Engineer approved materials selected from suitable fines derived from the excavation shall be smoothly worked across the entire width of the trench bottom to provide a supporting cushion.
5. Structures to Support Pipe: Where the bottom of the trench at subgrade is found to consist of material which is unstable to such a degree that the Engineer determines it cannot be removed and replaced with an approved material which may be properly compacted in place to support the pipe, the Contractor shall construct a foundation for the pipe consisting of piling, concrete beams, or other supports in accordance with plans prepared by the Engineer. Extra compensation will be allowed the Contractor for the additional work. In this event it shall be paid for in accordance with the provisions of the General Conditions of the Contract.
6. Lowering Materials into Trench: Proper implements, tools, and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of work. All pipe, fittings, valves, and hydrants shall be carefully lowered into the trench piece by piece, by means of a derrick, ropes, or other suitable tools or equipment in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials, pipes, fittings, etc., be dropped or dumped into the trench. Extreme care shall be taken to avoid damaging polywrap films. No chains or slings shall be allowed unless the entire sling is wrapped with a protective nylon web sock.
7. Laying of Pipe: Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. Under adverse trench conditions and as otherwise required by the Engineer, a heavy, tightly woven canvas bag of suitable size shall be placed over each end prior to lowering the pipe into the trench and left in place until a connection is to be made to the adjacent pipe. The interior of each pipe shall be inspected for defects, and the pipe shall be rejected if any defects are found within the pipe.

After placing a length of pipe in the trench, the jointed end shall be centered

on the pipe already in place, forced into place, brought to correct line and grade, and completed in accordance with the requirements of these Specifications. The pipe shall be secured in place with approved backfill material tamped around it. Pipe and fittings which do not allow a sufficient and uniform space for joints shall be rejected by the Engineer and shall be replaced with pipe and fittings of proper dimensions. Precautions shall be taken to prevent dirt or other foreign matter from entering the joint space.

At times when pipe laying is halted, the open end of pipe in the trench shall be closed by a watertight plug or other means approved by the Engineer. Pipe in the trench which cannot temporarily be jointed shall be capped or plugged at each end to make it watertight. This provision shall apply during all periods when pipe laying is not in progress. Should water enter the trench, the seal shall remain in place until the trench is pumped completely dry. The Contractor shall provide all plugs and caps of the various sizes required.

8. Deviations in Line or Grade: Wherever obstructions not shown on the plans are encountered during the progress of the work and such obstructions interfere to such an extent that an alteration in the plan is required, the Engineer shall have the authority to change the plans and direct a deviation from the line and grade or to arrange with the owners of the structures for the removal, relocation, or reconstruction of the obstructions. Any deviation from the line shall be accomplished by the use of appropriate bends unless such requirement is specifically waived by the Engineer.

Whenever it is necessary to deflect pipe from a straight line, the deflection shall be as directed by the Engineer and as described herein. In no case shall the amounts shown in Table 812-1, "Maximum Deflections of Ductile-Iron Pipe" for ductile-iron pipe and Table 812-2, "Maximum Deflections of Concrete-Steel-Cylinder Pipe" for concrete pipe, be exceeded.

9. Cutting Pipe: The cutting of pipe for inserting valves, fittings, or closure pieces shall be accomplished in a neat and workmanlike manner so as to produce a smooth end at right angles to the axis of the pipe. The recommendations of the pipe manufacturer shall be strictly followed by the Contractor. Only qualified and experienced workmen shall be used and, under no circumstances, shall a workman not equipped with proper safety goggles, helmet and all other required safety attire be permitted to engage in this work.

Asbestos-Cement: No field cutting will be allowed on asbestos-cement pipe. Repairs to Asbestos-Cement pipe shall be accomplished by removing one full

joint of AC pipe and replacing with appropriate PVC or Ductile Iron pipe and fittings.

To facilitate future repair work on water mains, no sections less than three feet (3') in length between fittings shall be allowed.

10. Joint Assembly:

- a. Rubber Ring Joints. The installation of pipe shall conform to the pipe manufacturer's assembly instructions. The method of inserting spigot ends of pipe in bells or collars known as "stabbing" shall not be permitted with pipe larger than 6 inches in size. Spigot ends of pipe larger than 6 inches in size must be properly inserted in the joint by means of suitable pushing or pulling devices.
- b. Mechanical Couplings. Mechanical couplings shall be assembled and installed according to the standards recommended by the manufacturer.

Mechanical coupling consists of a cylindrical steel middle ring, two steel follower rings, two rubber compound gaskets, and a set of steel bolts. The middle ring is flared at each end to receive the wedge-shaped gasket which is compressed between the middle ring flare and the outer surface of the pipe by pressure exerted on the follower rings through the bolt circle.

Prior to the installation of the mechanical coupling, the pipe ends shall be cleaned by wire brush or other acceptable method to provide a smooth bearing surface for the rubber compression gasket. The pipe shall be marked to align the end of the coupling which will center it over the joint. After positioning, the nuts shall be drawn up finger tight. Uniform pressure on the gaskets shall be applied by tightening alternate bolts on the opposite side of the circle in incremental amounts. Final tensioning shall be accomplished with a torque wrench and in a manner similar to the tightening procedure. The coupling shall then be left undisturbed for 24 hours to allow the gaskets to "pack in." Final torque check shall then be made prior to coating and wrapping the joint. Table 812-4, Torque for Mechanical Couplings, sets forth the proper torque for various sized mechanical couplings and is included for the convenience of the Contractor.

- c. Restraint Joints. Restraint Joints shall be installed as shown on the

plans or as directed by the Engineer. Installation shall conform to the manufactures' recommendation.

11. Abandonment of Old Mains. The Contractor shall accomplish all cutting, capping, plugging, and blocking necessary to isolate those existing mains retained in service from those abandoned. The open ends of abandoned mains and all other openings or holes in such mains occasioned by cutting or removal of outlets shall be blocked off by manually forcing cement grout or concrete into and around the openings in sufficient quantity to provide a permanent substantially watertight seal. Abandonment of old, existing water mains will be considered subsidiary to the work required, and no direct payment will be made.
12. Abandoned Valves. Valves abandoned in the execution of the work shall have the valve box and extension packed with sand to within eight (8") inches of the street surface. The remaining eight (8") inches shall be filled with 2,500 psi concrete or an equivalent sand-cement mix and finished flush with the adjacent pavement or ground surface. The valve covers shall be salvaged and returned to the Owner.

812.4 MEASUREMENT: Water main installed will be measured by the lineal foot for each size and type as follows:

From the center line intersection of runs and branches of tees to the end of the valve of a dead end run.

Between the center line intersection of runs and branches of tees. Where the branch is plugged for future connection, the measurement will include the entire laying length of the branch or branches of the fitting.

The measurement of each line of pipe of each size will be continuous and shall include the full laying lengths of all fittings and valves installed between the ends of such line except that the laying length of reducers will be divided equally between the connected pipe sizes. Lines leading to a tapping connection with an existing main will be measured to the center of the main tapped.

812.5 PAYMENT: Payment for water main installed will be made at the unit price bid per lineal foot of pipe of the various sizes installed by the open cut method. Such payment shall also include excavation, selected embedment material, backfill, polyethylene sleeve where required, hauling and disposition of surplus excavated material.

Removed AC pipe shall be manifested and disposed in accordance with current governing regulations at a permitted site. Payment for disposal of AC pipe will be made at the unit price bid per pound.

ITEM NO. 818
PVC (C-900) PIPE INSTALLATION

818.1 DESCRIPTION: This item shall consist of PVC (C-900) pipe installation installed in accordance with these specifications and as directed by the Engineer with the project plans. Deflection of PVC (C900) pipe shall not be allowed.

818.2 MATERIALS: The materials for PVC pipe installation shall conform to the Uni-Bell requirements.

818.3 CONSTRUCTION METHOD: PVC (C900) pipe shall be installed as specified within Item 812, "Water Main Installation," of these specifications. PVC (C-900) mains shall be laid to the depth and grades shown on the construction plans. The pipe shall be laid by inserting the spigot end into the bell flush with the insertion line or as recommended by the manufacturer. At no time shall the bell end be allowed to go past the "insertion line". An gap between the end to the spigot and the adjoining pipe is necessary to allow for expansion and contraction.

Joint Restraints: For all mains consisting of PVC (C-900) joint restraints are required. Joint restraints shall be non-directional and installed as recommended by the manufacturer or as shown on the plan drawings. Depending on the size of main and at the direction of the Construction Inspector or the Engineer, the Contractor may be required to restrain additional joints.

C-900 shall be field cut using a power saw with a steel blade or abrasive disc depending on the size of pipe. If a bevel is needed after field cutting, it should be in accordance with Uni-Bell recommendations.

Tracer Tape: Tracer tape shall be layed on top of initial backfill with a minimum three foot overlap. The maximum bury depth shall be three feet, minimum depth shall be one foot. The magnetic detector tape shall have a minimum width of six inches and shall be as manufactured by THOR Enterprises, Inc. or approved equal. It shall specifically be for water lines and have a blue color.

818.4 MEASUREMENT: PVC pipe installed will be measured as outlined in Item 812, "Water Main Installation," of these Specifications.

818.5 PAYMENT: Payment for PVC water main installed will be made as outlined in Item 812, "Water Main Installation," of these Specifications.

ITEM NO. 824
SERVICE SUPPLY LINES
(WATER)

824.1 **DESCRIPTION:** This item shall consist of water service supply lines installation and adjustment installed in accordance with these specifications and as directed by the Engineer.

824.2 **MATERIALS:** The materials for water service supply lines installation and adjustment shall conform to the specifications contained within the latest revision of SAWS Material Specification Items No. 21-10, "Brass Gate Valves," No. 15-40, "Brass Goods," No. 15-01, "Copper Tubing" and No. 100-30, "Service Saddles."

824.3 **CONSTRUCTION:**

1. General: Service supply lines and fittings, meter boxes and appurtenances shall conform to the Material Specifications and shall be installed by the Contractor as specified herein, or as directed by the Engineer and in accordance with the Standard Drawings DD-824-Series.
2. Designation of Service Supply Lines: A service supply line located between the water main and the inlet side of the water meter is designated as a "**water service line.**" A service supply line located between the outlet side of the water meter to the point of connection within the limits of the customers lot or property is designated as "**customer's yard piping**" and is covered under Item 822 of these Specifications. Services 2-inches and smaller are designated "**small services;**" services 4-inches and larger are designated "**large services.**"
3. Service Relays: Where the new main to which services are to be relayed is on the same side of the streets as the customer's meter, the services to be transferred are designated "**short relays.**" Where the new main to which services are to be relayed is on the opposite side of the street from the customer's meter, the services to be transferred are designated "**long relays.**"

Service Reconnects. Where the new main to which services are to be reconnected is on the same side of the street as the old main, the existing services to be transferred are designated "**service reconnects.**" Existing

services on the opposite side of the street to the new main shall be a **"long relay."**

4. Service Relocates: Service Relocates are defined as those services that are relocated from an alley or a street to a side or front street. Where the new main to which services are to be relocated is on the same side of the street as the customer's new meter box location, the services to be transferred are designated **"short relocates."** Where the new main to which services are to be relocated is on the opposite side of the street from the customer's new meter box location, the services to be transferred are designated **"long relocates"**.
5. New Services: If a new main is required to be extended to provide water service for new customers, the service lines laid to the new main shall be designated "new services." Where the new main to which new services are being laid is on the same side of the street as the customer's new meter box location, the services to be laid are designated **"new short services."** Where the new main to which new services are laid is on the opposite side of the street from the customer's new meter box location, the services to be laid are designated **"new long services."**
6. Tap Holes: Tap holes are excavations at existing mains which are required in connection with the replacement of water service lines by pulling, boring or jacking operations.

All backfill material shall be as prescribed for main and service line trench excavation.

For service lines and tap holes, payment for bedding, initial backfill and secondary backfill shall be included in the various sizes of each service placed.

7. Service Line Installation: Unless otherwise modified, service relays, service reconnects, service relocates and new services shall be installed as described herein, and in standard drawing DD-824-Series. Unless otherwise indicated, existing meter and meter box relocation shall be included in the service line installation.

All service line installation shall include a dielectric union to be installed within the meter box on the outlet side of the meter, as shown in Standard Drawing DD-824-Series.

Cutting, excavation, backfill and replacement of pavement shall be as specified herein and in accordance with applicable sections of the City of San Antonio Specifications for Utility Trench Excavation, Backfill, Surfacing, and Barricading. The minimum trench width for small service lines shall be 8 inches, while the minimum trench width for large service lines shall be the nominal pipe diameter plus 16 inches, except when specified otherwise by the Engineer. For 3/4" to 2" Service lines, minimum bury depth shall be 3 feet. For services greater than 2 inches, minimum depth of bury shall be 4 feet.

All service lines shall be installed in accordance with San Antonio Water System Standard Drawing DD-824 Series, SAWS Standard Material Specification 100-30, except that two strap service saddle clamps shall be installed for all tap connections made on water mains located within boundaries of Service Levels No. 9 through 16.

The Contractor shall use care to protect and preserve the polyethylene wrap around ductile iron water mains when installing service corporations. The required method is to wrap pipe tape around the pipe over the polywrap in the area to be tapped. The tap is to be made through the tape and polywrap. It is not necessary to remove and replace poly wrap. All exposed pipe, the corporation and the first three feet of the service shall be wrapped and taped to achieve a complete seal. In addition, a sand envelope shall extend over and around the connection to a depth of eight inches above the main.

Small service lines shall be embedded in sand in accordance with Item 804, "Excavation, Trenching and Backfill."

Where approved by the Construction Inspector in the field, the Contractor may lay the new service line from the corporation stop to the curb stop or angle valve and upon completion, isolate the new service line by closing the curb stop or angle valve until such time as the meter box is set.

8. Splicing: A single splice of long service lines by means of a 3-part compression or flared coupling will be permitted only when approved in advance by the Engineer provided the location of the splice is not under pavement or concrete. The segment added shall be the same material as the existing service line, unless otherwise directed by the Engineer. Splicing of short service lines will not be permitted.
9. Boring or Jacking Service Lines: Service lines which cross paved streets may be installed at the Contractor's option by boring or jacking operations. Where it becomes necessary to widen the main trench section to accommodate a

bore pit, such widening shall not extend more than one additional foot into the traffic side of the street.

10. Tapping Asbestos Cement Water Mains: All necessary service line tapping of asbestos-cement pipe shall be completed during the period immediately before or after hydrostatic pressure testing operations so that subsequent flushing will maximize the elimination of contaminants associated with the tapping process.

Tapping of AC pipe must be in accordance with manufacturing recommendation and must be done only with tap machine having a built in flush valve, and the flush valve must be open during the entire procedure.

11. Abandonment of Service Lines: The Contractor shall accomplish all cutting, capping, and plugging necessary to isolate new service lines transferred to new and existing mains from those abandoned, including service lines designated on the plans as "tap plug" and "tap kill." The corporation stop for an abandoned service line tapped on a ferrous main shall be removed, and the tap at the main shall be plugged with an appropriately sized brass plug. For a non-ferrous main, the corporation stop shall not be removed from the main. Instead, the corporation stop shall be closed and the flared nut shall be removed from the corporation stop. After the appropriately sized copper disc is inserted inside the flared nut, replace the flared nut on the corporation stop. The Contractor shall salvage copper service line tubing, brass fittings, and other materials as directed by the Construction Inspector and return them to the Owner.
12. Tapping PVC (C-900): Tapping of PVC must be in accordance with Uni-Bell procedures. Direct Tapping will not be allowed. All drill cutting tools must be of the "shell type" with internal teeth or double slots which will retain the coupon. The shell cutters must be designed for C-900 pipe, thus having sufficient root depth to handle the heavier walled pipe.
13. Small Service Lines: Copper tubing shall be used for 3/4" through 2" service lines. Brass fittings for 3/4" and 1" service lines shall be of the flared or compression type for the use with Type 'K' soft annealed copper tubing. Brass fittings for 1 1/2" and 2" lines shall be of the flared or compression type for use with type 'K' soft annealed copper tubing, except as modified by Item 824.3 h, "Splicing."

Copper tubing shall be cut squarely by using an approved cutting tool and by

avoiding excessive pressure on the cutting wheels which might bend or flatten the pipe walls. After the tubing has been cut, but before flaring, a reamer shall be used to remove the inside rolled lip from the tubing. Flared ends shall be expanded by the use of a flaring tool using care to avoid splitting, crimping, or overstressing the metal. Pipe adjacent to fittings shall be straight for at least 10 inches. Bending of tubing shall be accomplished by using an appropriate sized bending tool. No kinks, dents, flats, or crimps will be permitted, and should such occur, the damaged section shall be cut out and replaced. When compression fittings are used, the copper tubing shall be cut squarely prior to insertion into the fitting. Final assembly shall be in accordance with the manufacturer's recommendations.

14. Small Service Lines on New Mains: The work involved in the installation of new copper service lines shall consist of all excavation through whatever material encountered; trench excavation protection; drilling and tapping the new main with an approved tapping machine; setting the curb stop or angle valve at the meter; laying the new copper service line at the specified depth between the main and the meter and its tie-in at the corporation and the curb stop or the angle valve; relocating the existing meter and installing a new meter box where required in accordance with Item 833, "Meter and Meter Box Installation," herein; backfilling the trench with approved selected material and disposal of surplus excavated material; capping the tap hole with asphalt treated base, including the outer limits of the main trench line with service line trench; cutting and replacing pavements, curbing and sidewalks of all types over the limits of the main line trench and the completed service line trench.
15. Reconnecting Service Lines: Both the old and new water mains at existing service line connections shown on the plans shall be exposed, the old main for the purpose of gaining access to the existing service corporation stop and the new main for the purpose of installing the new corporation stop. The new main shall be drilled and tapped with an approved tapping machine, a new corporation stop installed under pressure, and the trench extended laterally to expose a sufficient length of the existing service line to provide slack to bend it into position for tying to the new corporation stop. After suitable notification to the customer, the Contractor shall "kill" the existing service by closing the corporation stop, removing the existing flare nut, inserting inside the existing flared nut an appropriately-sized copper disc and replacing the existing flared nut on the corporation stop if the main is non-ferrous, or

plugging the existing service line at the main if the main is ferrous. The Contractor shall then immediately open the stop and restore water service to the customer. Where it is not possible to obtain sufficient length in the existing service to tie directly to the new main, at the direction of the Engineer, the Contractor shall splice the necessary length of new tubing and tie it to the existing service by means of a compression coupling at a point as close as practicable to the new main.

Cutting and bending of the tubing, introduction of slack to compensate for soil movement, and completion of the installation shall be as specified in Item 824.3.p, "Relaying Service Lines."

Where the old and new mains are on opposite sides of the street, service lines may be installed under the street pavement by boring rather than trenching.

16. Relaying Service Lines: The existing or new mains shown on the plans shall be exposed opposite location stakes placed on site at the direction of the Engineer. The existing or new main shall be drilled and tapped with an approved tapping machine, a new corporation stop installed, and the trench extended laterally to the location specified for the meter box. The existing meter shall be reset and the meter box and base shall be installed at its staked location and perpendicular to the corporation stop in the water main. The meter box location shall not vary more than 24 inches in any direction from its staked location. The service line shall be installed with sufficient slack to compensate for soil movement. Where the location of the existing meter is not changed, the new service line shall be extended from the main to the existing meter, a new curb stop installed at the end of the service line, and connected to the inlet side of the meter. If disturbed, the existing meter box shall be reset to correct grade. Long service relays may be placed under the street pavement by boring or jacking rather than trenching.
17. Single Service Line - Dual Meters: The single service line - dual meter installation shall consist of a 1" copper service line reducing to two 3/4" copper service lines at a tee which shall be set in line with the front edge of meter boxes for 5/8" and 3/4" meters. A single service line with dual meters shall be installed in those new residential developments where new 5/8" and 3/4" meters are required and in main replacement work where it is necessary to change the location of existing 5/8" and 3/4" meters. Single service line - dual meter materials and installation requirements shall conform with requirements established herein (See Drawing DD824-05.).
18. Small Service Lines on Existing Mains: The work involved in the

installation of new copper service lines on existing mains shall consist of jacking, boring, tunneling, and, where authorized, open trench operations; all excavation through whatever material encountered; trench excavation protection; using the existing corporation when approved by the COI; tapping the existing main and installing the new corporation and setting the curb stop or angle valve at the meter; relocating the existing meter and installing a new meter box where required in accordance with Item 833, "Meter and Meter Box Installation," herein; abandoning the existing corporation stop, removing the existing flared nut, inserting inside the existing flared nut an appropriately sized copper disc and replacing the existing flared nut on the corporation stop if the main is non-ferrous, or plugging the existing service line at the main if the main is ferrous; installing the new service line at the same grade as the existing service line or as the specified grade between the main and the existing meter and its tie-in at the corporation and the curb stop; disposal of surplus excavated material; capping the tap hole with asphalt treated base including the outer limits of the main line trench and the service line trench; cutting and replacing all surfaces of whatever type encountered over the completed service line trench; restoration of the site.

19. Large Service Lines: Ductile-iron pipe and cast-iron fittings used for metered service lines and non-metered fire service lines larger than 2 inches shall be installed in accordance with the applicable provisions of Item 812, "Water Main Installation," except where otherwise approved by the Engineer.
20. Large Service Lines on New Mains: The work involved in the installation of the new metered service lines and non-metered fire service lines shall consist of all excavation through whatever material encountered; trench excavation protection, installing tees, pipe and fittings of various sizes including main line and service line valves, valve boxes, DI pipe, fittings, and reaction block required; backfilling with approved selected material; cutting and replacing pavements, curbing, and sidewalks of all types over the limits of the main line trench and the completed DI service line.
21. Large Service Lines on Existing Mains: The work involved in the installation of the new metered service lines and non-metered fire service lines shall consist of all excavation through whatever material encountered, trench excavation protection, cutting-in tees and installing tapping sleeves and valves, pipe and fittings of various sizes including main line and service valves; valves boxes, DI pipe, fittings and reaction block required; backfilling with approved selected material; cutting and replacing pavements, curbing, and sidewalks of all types over the limits of the main line trench and the completed DI service line.

824.4**MEASUREMENT:**

Reconnect Short Service will be measured by the unit of the various types and sizes of each service line reconnected.

Relay Short Service will be measured by the unit of the various types and sizes of each service line relayed.

Relay Long Service will be measured by the unit of the various types and sizes of each service line relayed.

Relocate Short Service will be measured by the unit of the various types and sizes of each service line relocated.

Relocate Long Service will be measured by the unit of the various types and sizes of each service line relocated.

New Short Service will be measured by the unit of the various types and sizes of each new service line installed.

New Long Service will be measured by the unit of the various types and sizes of each new service line installed.

824.5

PAYMENT: Payment for Reconnect will be made at the unit price for each service line of the various sizes reconnected. Such payment shall also include excavation, trench excavation protection, hauling and disposition of surplus excavated materials, sand backfill, cutting pavement and surface structures of whatever type encountered and replacement with whatever type specified, copper tubing and fittings, of the various sizes used in the service line reconnection.

Payment for Relay Short and Long Service will be made at the unit price for each service line of the various sizes relayed. Payment shall include reconnection of new service to the existing meter and the adjustment of the meter, meter box, and customer valve. Such payment shall also include excavation, trench excavation protection, hauling and disposition of surplus excavated materials, sand backfill, cutting pavement and surface structures of whatever type encountered and replacement with whatever type specified, copper tubing and fittings of the various sizes used in the service line relay.

Payment for Relocate Short and Long Service will be made at the unit price bid for each service line of the various sizes relocated. Such payment shall also include excavation, trench excavation protection, hauling and disposition of surplus

excavated materials, sand backfill, meter box relocation, cutting pavement and surface structures of whatever type encountered and replacement with whatever type specified, copper tubing, and fittings of the various sizes used in the service line relocation.

Payment for New Short and Long Service will be made at the unit price bid for each new service line of the various sizes installed. Such payment shall also include excavated materials, trench excavation protection, sand backfill, cutting in pavement and surface structures of whatever type encountered and replacement with whatever type specified, meter box, meter template, copper tubing and fittings, of the various sizes used in the new service line installation.

ITEM NO. 828
GATE VALVES

828.1 **DESCRIPTION:** This item shall consist of gate valves installed in accordance with these specifications and as directed by the Engineer.

828.2 **MATERIALS:** The materials for "Gate Valves" shall conform to the specifications contained within the latest revision of SAWS Material Specification 21-02, "Resilient Seated Gate Valves."

828.3 **CONSTRUCTION:** Gate Valve installation shall include the valve, reaction blocking when required conforming to plan details, cast iron boot, valve box extension (Ductile Iron Riser Pipe), valve box, concrete collar where subjected to vehicular traffic, and the valve box lid.

The valve box shall be placed in such a manner to prevent shock or stress from being transmitted to the valve. It shall be centered and plumb over the operating nut of the valve with the box cover flush with the surface of the finished pavement or at such other level as may be directed by the Engineer. Valve boxes located in streets or other area subject to vehicular traffic shall be provided with concrete collars as shown in the Standard Drawings. Collars around such valve boxes shall be formed and finished off neatly and in a workmanlike manner.

828.4 **MEASUREMENT:** Gate Valve and valve box will be measured by the unit of each such assembly of the various sizes of gate valves and valve boxes installed to the finished grade.

828.5 **PAYMENT:** Payment for Gate Valves, complete with valve box, will be made at the unit price bid for each such assembly of the various sizes of gate valves and valve boxes installed. Such payment shall also include excavation, selected embedment material, anti-corrosion embedment when specified, hauling, and disposition of surplus excavated material, backfill, concrete collar at the valve box where subjected to vehicular traffic, riser pipe, cast iron boot, packing, tar paper, concrete grout, concrete reaction blocking, protective coating material for bolts, nuts, and ferrous surfaces, polyethylene sleeve where required.

ITEM NO. 834
FIRE HYDRANTS

834.1 DESCRIPTION: This item shall consist of fire hydrant installation in accordance with these specifications and as directed by the Engineer with the project plans.

834.2 MATERIALS: The materials for fire hydrant installation shall conform to the specifications contained within the latest revision of SAWS' Material Specification 25-01, "Fire Hydrants."

834.3 CONSTRUCTION:

1. General: Hydrants shall be connected to the main as shown on the plans or as directed by the Engineer. They shall be installed in accordance with plan details for proper thrust blocking. They shall be installed in a manner which will provide complete accessibility and the minimum possibility of damage from vehicles or injury to pedestrians. When the hydrant is placed directly behind the curb, the hydrant barrel shall be set so that no portion of the hydrant will be less than twelve (12) inches nor more than seven (7) feet from the back face of the curb. When the hydrant is set in the lawn space between the curb and the sidewalk or between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within 6 inches of the sidewalk.

Setting final grade of fire hydrant to match proposed or existing field conditions is the responsibility of Contractor.

Hydrants shall be set in accordance with the plan details and shall be set plumb and shall have their nozzles parallel with or at right angles to the curb with the pumper nozzle facing the curb. Drainage and blocking shall be provided at the base of the hydrant as specified. No fire hydrant drainage system or pit shall be connected to a storm or sanitary sewer.

The Contractor shall install anchored or flanged style fittings.

2. Restrained Joints: Restrained joints shall be furnished for pipe at all changes in direction as indicated on the plans, detail, or as directed by the Engineer. Restrained mechanical joints shall be locked mechanical joints.
3. Installation on Water Mains: Ductile Iron (DI) pipe, cast-iron and ductile-iron fittings, and valves used in the placement of fire hydrants and

connections to the main will be considered part of the fire hydrant installation and not a part of the main construction, and no separate payment will be made for this pipe. Hydrants shall be connected to the main as shown on the plans or as directed by the Engineer. They shall be installed in a manner which will provide complete accessibility and the minimum possibility of damage from vehicles or injury to pedestrians.

834.4 **MEASUREMENT:** Standard Fire Hydrant with 6-inch Valve and Box will be measured by the unit of each fire hydrant, valve, and box installed.

834.5 **PAYMENT:** Fire Hydrant with 6-inch Valve and Box will be made at the unit price bid for each assembly installed under Item 834, "Fire Hydrant."

Such payment shall also include excavation, backfill, selected material, anti-corrosion embedment when specified, hauling and disposition of surplus excavated materials, backfill, branch line pipe, nipples, and fittings exclusive of the tee from the main line pipe, polyethylene sleeve where required, asphaltic material for ferrous surfaces, concrete reaction or thrust blocking, restoration of existing fire hydrant sites and removal and relocation of existing fire hydrant as directed by the Construction Inspector.

ITEM NO. 836
GREY-IRON AND DUCTILE-IRON FITTINGS

- 836.1** **DESCRIPTION:** This item shall consist of grey-iron and ductile-iron fitting installation and adjustment installed in accordance with these specifications and as directed by the Engineer.
- 836.2** **MATERIALS:** The materials for grey-iron and ductile-iron fitting installation and adjustment shall conform to the specifications contained within the latest revision of SAWS Material Specification Item 10-10, "Grey-Iron and Ductile-Iron Fittings."
- 836.3** **CONSTRUCTION:**
- a. Fittings: All fittings shall conform to AWWA Standards for Grey-Iron and Ductile-Iron Compact Fittings, and AWWA Standard C-153 for Ductile Iron Compact Fittings, Class D is manufactured. Fittings 6 inches through 12 inches in size shall be mechanical joint compact body unless otherwise stated on the plans. Fittings shall be installed with the thrust blocking shown in the plans. Fittings 16 inches through 24 inches in size shall be mechanical joint type unless otherwise specified on the plans. Adapters shall be used where necessary to provide a transition between asbestos-cement pipe and the fittings. Thrust blocking shall be provided as specified on the plans or in the standard drawings. Anti-corrosion embedment incidental to all installed cast-iron fittings shall be provided as specified in Item 804, "Excavation, Trenching and Backfill," and no separate payment will be made for this embedment.
 - b. Cleaning Ductile-Iron And Cast-Iron Fittings: All lumps, blisters, and excess coal-tar coating shall be removed from the ends of cast-iron fittings. The outside of the spigot and the inside of the bell shall be wire-brushed and wiped clean, dry, and free from oil and grease before the pipe is laid. The interior of the pipe shall be blown clean with compressed air or swabbed out clean and dry as directed by the Engineer. Immediately prior to placing any pipe in the trench, the interior shall be cleaned by an approved brush or swab or with compressed air to remove all dirt and foreign materials. All pipe and fittings shall be suspended above ground to be inspected for defects by the Contractor.
- 836.4** **MEASUREMENT:** Ductile-Iron and Grey-Iron Fittings will be measured by the weight to the nearest one-hundredth of a ton of the various sizes of cast iron fittings installed.

836.5

PAYMENT: Payment for Cast-Iron and Ductile Iron Compact Fittings will be made at the unit price bid for each ton of fittings to the nearest one-hundredth of a ton of all types and sizes installed and will be based upon the weights of fittings shown in Table 836-1. Such payment shall also include excavation, selected embedment material, anti-corrosion embedment when specified, hauling and disposition of surplus excavated materials, polyethylene sleeve, asphaltic material for ferrous surfaces, and concrete reaction and thrust blocking. If compact fittings are not manufactured and other fittings are installed, Contractor will provide quantities and unit weights with pay request.

ITEM NO. 840
WATER TIE-INS

- 840.1** **DESCRIPTION:** This item shall consist of water main tie-ins installed in accordance with these specifications and as directed by the Engineer.
- 840.2** **MATERIALS:** The materials for water main tie-ins shall conform to the specifications contained within the latest revision of SAWS Material Specifications for all appropriate items.
- 840.3** **CONSTRUCTION:** The Contractor shall make tie-ins from new water mains to existing water mains as shown on the plans or as directed by the Engineer. The Contractor shall be responsible for all shutdowns and isolation of the existing mains; cutting pipe for the connection; dewatering the excavation; customer notification of the shutdown; and all other requirements as directed by the Engineer or Inspector to provide completion in a safe and secure manner. All tie-ins shall be done after normal work hours, (8am-5pm). During construction, the planned shutdown and tie-in shall be: coordinated through and approved by the Construction Inspector; done at a time which will be at the least inconvenience to our customers. No additional compensation will be provided for tie-ins done after normal working hours.
- 840.4** **MEASUREMENT:** Tie-in will be measured by the unit of each such assembly of the various sizes of tie-ins installed.
- 840.5** **PAYMENT:** Payment for "Tie-ins" will be made at the unit price bid for each tie-in of the various types and sizes completed. Such payment shall include shut-down and isolation of the existing main to which the new main is to be connected; cutting pipe for the connection; dewatering the excavation; customer notification of service interruption where required. Connections between new and existing mains which are made with tapping sleeves and valves and by cutting in tees will be as a no separate bid-item.

ITEM NO. 841
HYDROSTATIC TESTING OPERATIONS

841.1 DESCRIPTION: This item shall consist of hydrostatic testing operations of water mains in accordance with these specifications.

841.2 MATERIALS: The materials for hydrostatic testing operations installation and adjustment shall conform to the appropriate specifications contained within the latest revision of SAWS Material Specifications.

841.3 CONSTRUCTION:

1. Flushing: Immediately upon completion of pipe laying, the Contractor shall flush all mains which are scheduled to be disinfected by machine chlorination by the Owner. This flushing shall be at the direction of the Engineer and shall consist of completely filling sections of main between valves and then displacing such initial volumes of water by introducing clear water from existing facilities into and through the main to the point of discharge from the main being flushed. The flow-through shall continue until the Engineer determines all dust, debris, or foreign matter that may have entered during pipe laying operations have been flushed out. The new line shall then be left under system pressure for testing.

To avoid damage to pavement and inconvenience to the public, fire hoses shall be used to direct flushing water from the main into suitable drainage channels or sewers.

2. Operation of Valves: No valve in the Owner's water distribution system shall be operated by the Contractor without prior permission of the Engineer. The Contractor shall notify the Owner when a valve is to be operated and shall only operate the valve in the presence of the Engineer's representative.
3. Hydrostatic Test: Except in the high pressure sections of the water distribution system where test pressures will exceed 150 psi, all new mains shall be hydrostatically field tested at a maximum test pressure of 150 psi before acceptance by the Engineer. Where designated as "high pressure area," all new mains shall be hydrostatically field tested at a maximum test pressure of 200 psi before acceptance by the Engineer. It is the intent of these Specifications that all joints be watertight and that all joints which are found

to leak either by observation during any test shall be made watertight by the Contractor. In case repairs are required, the hydrostatic field test shall be repeated until the pipe installation conforms to the specified requirements and is acceptable to the Engineer. The Contractor shall notify the Engineer prior to beginning the test and the San Antonio Water System Construction Inspector shall be present during the pressure test.

4. Test Procedures: After the new main has been laid and backfilled as specified, but prior to chlorination and replacement of pavement, it shall be filled with water for a minimum of 24 hours and then subjected to a hydrostatic pressure test.

The specified test pressure shall be supplied by means of a pump connected to the main in a satisfactory manner. The pump, pipe connection, and all necessary apparatus including gauges and meters shall be furnished by the Contractor. Unless otherwise specified, the Owner will furnish water for filling lines and making tests through existing mains. Before applying the specified test pressure, all air shall be expelled from the main. To accomplish this, taps shall be made, if necessary, at the points of highest elevation and afterwards tightly plugged. At intervals during the test, the entire route of the new main shall be inspected to locate any leaks or breaks. If any are found, they shall be stopped or repaired, and the test shall be repeated until satisfactory results are obtained. The hydrostatic test shall be made so that the maximum pressure at the lowest point does not exceed the specified test pressure.

The duration of each pressure test shall be a minimum of four (4) hours for new mains in excess of 1,000 lineal feet and a minimum of one (1) hour for new mains less than 1,000 lineal feet after the main has been brought up to test pressure. The test pressure shall be measured by means of a tested and properly calibrated pressure gauge acceptable to the Engineer. All pressure tests shall be continued until the Owner is satisfied that the new main meets the requirements of these Specifications.

Should any test of pipe in place disclose leakage greater than that listed in Table 841-1 or 841-2, "Hydrostatic Test Leakage Allowances," as applicable, the Contractor shall at his own expense locate and repair the defective joints until the leakage is within the specified allowance.

Leakage is defined as the quantity of water supplied into the newly laid main, or any valved section of it, necessary to maintain the specified leakage test pressure after the main has been filled with water and the air expelled.

Exhibit S-841 is a schematic showing the arrangement of the test apparatus as well as the detailed procedure for conducting the hydrostatic field test.

841.4 **MEASUREMENT:** Hydrostatic Pressure Test will be measured by the unit of each successful test conducted.

841.5 **PAYMENT:** Payment for "Hydrostatic Pressure Test" will be made at the unit price bid for each successful test. Such payment shall also include all pipe, valves, fittings, pumping equipment, pressure gauge, and other required apparatus incidental to the conduct of the test.

TABLE 841-1

HYDROSTATIC TEST LEAKAGE ALLOWANCES (MAXIMUM) @ 150 PSI

Nominal Diameter & Type Pipe	ALLOWABLE LEAKAGE IN GALLONS PER HOUR (GPH)*													
	100 L.F.	200 L.F.	300 L.F.	400 L.F.	500 L.F.	600 L.F.	700 L.F.	800 L.F.	900 L.F.	1000 L.F.	2000 L.F.	3000 L.F.	4000 L.F.	5000 L.F.
6" DI**	0.11	0.22	0.33	0.44	0.55	0.66	0.77	0.88	0.99	1.10	2.20	3.30	4.40	5.50
8" DI**	0.15	0.29	0.44	0.59	0.71	0.88	1.03	1.18	1.32	1.47	2.94	4.41	5.88	7.35
12" DI**	0.22	0.44	0.66	0.88	1.10	1.32	1.54	1.76	1.98	2.20	4.40	6.60	8.80	11.00
16" DI**	0.29	0.59	0.88	1.18	1.47	1.76	2.06	2.35	2.65	2.94	5.88	8.82	11.76	14.70
20" DI**	0.39	0.74	1.10	1.47	1.84	2.21	2.55	2.94	3.31	3.68	7.63	11.04	14.72	18.40
20" CSC	0.08	0.16	0.24	0.32	0.40	0.47	0.55	0.63	0.71	0.79	1.58	2.37	3.16	3.95
24" DI**	0.44	0.88	1.32	1.76	2.21	2.65	3.09	3.53	3.97	4.41	8.82	13.23	17.64	22.05
24" CSC	0.1	0.19	0.29	0.38	0.48	0.57	0.67	0.76	0.86	0.95	1.90	2.85	3.80	4.75
30" DI**	0.55	1.1	1.66	2.21	2.76	3.31	3.86	4.42	4.97	5.52	11.04	16.56	22.08	27.60
30" CSC	0.12	0.24	0.35	0.47	0.59	0.71	0.83	0.94	1.06	1.18	2.36	3.54	4.72	5.90
36" DI**	0.66	1.32	1.99	2.65	3.31	3.97	4.63	5.3	5.96	6.62	13.24	19.86	26.48	33.10
36" CSC	0.14		0.28	0.57	0.71	0.85	0.99	1.14	1.28	1.42	2.84	4.26	5.68	7.10
42" DI**	0.77	1.54	2.32	3.09	3.86	4.63	5.4	6.18	6.95	7.72	15.44	22.16	30.88	38.60
42" CSC	0.17	0.33	0.5	0.66	0.83	1	1.16	1.33	1.49	1.66	3.32	4.98	6.64	8.30
48" DI**	0.88	1.77	2.65	3.53	4.42	5.3	6.18	7.06	7.95	8.83	17.66	26.16	35.32	44.15
48" CSC	0.19	0.38	0.57	0.76	0.95	1.13	1.32	1.51	1.7	1.89	3.78	4.98	6.64	8.30
54" CSC	0.21	0.42	0.63	0.84	1.05	1.26	1.47	1.68	1.89					
60" CSC	0.24	0.48	0.72	0.96	1.2	1.44	1.68	1.92	2.16					

* PVC pipe shall be tested to DI pressures. GPH for CSC Pipe are manufacturer's maximum.

** DI pipe includes mechanical and push-on joints.

ITEM NO. 844
BLOWOFF ASSEMBLIES

844.1 **DESCRIPTION:** This item shall consist of Blowoff Assemblies installation installed in accordance with these specifications and as directed by the Engineer.

844.2 **MATERIALS:** The materials for blowoff assemblies, installation and adjustment shall conform to the specifications contained within the latest revision of SAWS Material Specification.

844.3 **CONSTRUCTION:** Permanent and temporary blowoff assemblies shall be installed where shown on the plans and at locations designated by the Engineer.

The permanent blowoff shall consist of all galvanized iron pipe, valve, and fittings of the various sizes shown on the plans, six (6) inch valve box assembly and concrete collar around the valve box. The temporary blowoff shall consist of all galvanized iron pipe, valve and fittings of the various sizes shown on the plans. Valve box shall be raised or installed to finished grade and installed in accordance with the plan details.

844.4 **MEASUREMENT:** Permanent Blowoff will be measured by the unit of each such assembly of the various sizes of permanent blowoffs installed.

Temporary Blowoff will be measured by the unit of each such assembly of the various sizes of temporary blowoffs installed.

844.5 **PAYMENT:** Payment for Permanent and Temporary Blowoff will be made at the unit price bid for each such assembly of the various types and sizes installed in accordance with the details shown in the Standard Drawing DD-844 series. Such payment shall also include excavation, selected embedment material, anti-corrosion embedment when specified, and the hauling and disposition of surplus excavated materials. Payment for eccentric reducers and eccentrically tapped caps and flanges will be made under Item 836, "Cast-Iron Fittings," while payment for the pipe nipple with reaction stop ring will be made under Item 812, "Water Main Installation."

ITEM NO. 847
DISINFECTION

847.1 DESCRIPTION: This item shall consist of disinfection of new mains utilizing HTH in accordance with these specifications.

847.2 MATERIALS: The materials for disinfection shall conform to the appropriate specifications contained within the latest revision of Item 100-20 of SAWS Material Specifications.

847.3 CONSTRUCTION: After the new mains have successfully passed the pressure test specified in Section 841, "Hydrostatic Testing Operations," the Contractor will disinfect the main with dry Calcium Hypochlorite (HTH).

1. Operation of Valves: During and after the disinfection of the mains, the Contractor shall be notified by the Engineer sufficiently in advance to enable the Contractor to have a competent representative present whenever valves are to be operated that will affect the pressure in any part of the work for which the Contractor is responsible.
2. Contractor's Personnel and Equipment: The Contractor shall supply labor and equipment necessary to make all excavations required for chlorination, equipment connections, subsequent flushing, and placing the mains in service.
3. Safeguarding and Backfilling Open Holes: The Contractor shall be responsible for safeguarding any open holes excavated or left open for flushing and disinfection purposes. Following completion of disinfection, the Contractor shall backfill such holes in accordance with appropriate provisions of Item 804, "Excavation, Trenching and Backfill."
4. General: Mains shall be disinfected with dry Calcium Hypochlorite (HTH) where shown on the plans or as directed by the Engineer. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measures to protect his personnel during disinfection operations.
5. Dosage: The Contractor shall disinfect the new or replaced mains with

Calcium Hypochlorite (HTH) of 70% available chlorine furnished by the Contractor. Sufficient Calcium Hypochlorite (HTH) shall be used to obtain a minimum chlorine concentration of 50 ppm. Table 847-1, "Chlorine Dosage," is included for the convenience of the Contractor.

A heaping tablespoon holds approximately ½ ounce, and a standard measuring cup holds approximately 8 ounces.

6. Filling the Main: Those sections of main to which the dry Calcium Hypochlorite (HTH) has been applied shall be filled slowly to allow for the even distribution of the disinfecting material. The manipulation of valves shall be under the supervision of the Engineer's representative in accordance with Section 847.3a, "Operation of Valves."
7. Holding Time: The length of time that sections of main disinfected with Calcium Hypochlorite (HTH) shall be allowed to stand undisturbed will depend upon the particular job and TNRCC criteria.
 - a. When circumstances permit a shutdown with no customers out of service, the required minimum detention time will be 24 hours with a 50 ppm chlorine dosage.
 - b. When customers are out of service during a shutdown with no leakage past valves, the required minimum detention time will be 3 hours and the chlorine dosage will be 300 ppm.
 - c. When customers are out of service with some leakage past valves, the required minimum detention time will be 30 minutes with a 500 ppm chlorine dosage.
8. Flushing: Following the expiration of the specified holding time, the treated section of main shall be flushed thoroughly by the Contractor in accordance with the applicable provisions of Item 841, "Hydrostatic Testing Operations." Flushing shall continue until no chlorine remains detectable by taste or odor or until the chlorine residual is less than 0.3 ppm.
9. Preventing Reverse Flow: Valves shall be manipulated so that the strong chlorine solution in the line being treated will be flushed out of the main and will not flow back into the line supplying the water.

10. Supervision. All disinfection of mains shall be done under the general supervision of a representative of the Owner.
11. Additional Treatment: Should the new main fail to meet minimum public health standards for bacteriological quality after flushing, further treatment shall be as directed by the Engineer. If further disinfection is required, chlorination shall be done in accordance with the SAWS guidelines for Disinfection of New Mains Utilizing Machine Chlorination. In no case, however, shall the new line be acceptable as complete and satisfactory until the bacteriological quality of the water taken from the main meets the standards of the TNRCC.
12. Safeguarding and Backfilling Open Holes: The requirements for safeguarding and backfilling all holes excavated or left open for chlorinating and sampling shall be as specified in Item 550, "Trench Excavation Safety Protection," of the City of San Antonio Specifications.

If open hole is unsafe and does not have proper trench protection, SAWS Chlorination Crew will not chlorinate project until acceptable trench protection is provided.

847.4 MEASUREMENT: Disinfection operations are considered subsidiary to the work and no separate payment will be made to the Contractor for this work.

847.5 PAYMENT: Disinfection operations are considered subsidiary to the work and no separate payment will be made to the Contractor for this work.

TABLE 847-1	
CHLORINE DOSAGE	
Ounces Per Foot diameter of Pipe in Inches	To Obtain 50 ppm Chlorine Dosage
6	0.0138
8	0.0233
10	1.0
12	0.0523
14	0.0708
16	0.0934
18	0.1175
20	0.1455
24	0.208
30	0.327
36	0.469
42	0.637
48	0.0833
54	1.0575
60	1.308

ITEM NO. 848
SANITARY SEWERS

848.1 **DESCRIPTION:** This item shall govern the furnishing, installation and jointing of sanitary sewer pipe of the size and type specified by the project's plans and specifications.

All plans, materials and specifications shall be in accordance with the Texas Natural Resource Conservation Commission's rules to include: 30 TAC 313.5, and Design Criteria for Sewerage Systems 30 TAC 317.1, 30 TAC 317.2, 31 TAC 317.3 and 30 TAC 317.13, or any revisions thereto as applicable.

848.2 **MATERIALS:** Materials for sanitary sewer pipe and fittings shall be either rigid or flexible.

1. Flexible Pipe: Pipe consisting of materials other than those listed above.
 - a. Any flexible conduit having a deflection of the inside diameter greater than five percent (5%) after installation will not be accepted.

A "GO, NO-GO" Deflection Testing Mandrell built in accordance with the detail drawing, as shown on the Drawings DD-848, shall be furnished at the Contractor's expense and shall be used in testing pipe deflection for acceptance, unless directed otherwise by the Engineer.
 - b. Working room: The working room for flexible pipe shall be a minimum of six inches (6").
 - c. Pipe Stiffness:
 - (1) Minimum pipe stiffness shall not be less than 46 psi.
2. Poly Vinyl Chloride (PVC) Sewer Pipe: Pipe shall conform to ASTM D-3034 SDR 26 (pressure pipe).
3. Mechanical or compression joints, concrete jointing collars, or non-reinforced rubber adaptors shall be used only as approved by the Owner.

CONSTRUCTION: All sanitary sewer mains shall be constructed in accordance with the specifications herein outlined and in conformity with the required lines, grades, and details shown on the plans and as directed by the Engineer. Successful passage of the air test, as described under TNRCC Criteria, shall be as required for the acceptance of the mains.

1. **Water Main Crossings:** Where gravity or force main sewers are constructed in the vicinity of water mains, the requirements of the Texas Natural Resource Conservation Commission TAC 317.13, Appendix E, shall be met.
2. For excavation, trenching and backfill requirements, see Item No. 804.
3. **Pipe Laying:** The Owner will inspect all pipe before it is placed in the trench and will reject any sections found to be damaged or defective to a degree that would affect the friction of the pipe. Rejected pipe shall be immediately removed from the site of the work. The Contractor shall be required to commence construction and laying of pipe at the downstream end of the sanitary sewer outfall line and proceed non-stop in a forward upstream direction. No pipe shall be laid within ten feet (10') of any point where excavation is in progress. Pipe laying shall proceed upgrade with the tongue or spigot pointing in the direction of flow. Pipe shall be lowered into the trench without disturbing the prepared foundation or the trench sides. The drilling of lifting holes in the field will not be permitted. Pipe shall be installed by means of a concentric pressure being applied to the pipe with a mechanical pipe puller. Pulling or pushing a joint of pipe in place by using a crane, bulldozer, or backhoe will not be permitted. Pipe shall be pulled home in a straight line with all parts of the pipe on line and grade at all times. No side movement or up and down movement of the pipe will be permitted during or after the pulling operation. Should coupled joints of pipe be out of line or off grade, they shall be removed one joint at a time and brought to the proper line and grade. The lifting or moving of several joints of coupled pipe at one time to close a partially open joint or to fine grade under laid joints of pipe will not be permitted.
4. **Laser Beams:** The use of laser Beams for vertical control shall be required provided the Contractor makes available to the Inspector, when requested, a level and rod of sufficient sensitivity to accurately determine differences in elevation between points 300 feet apart with one instrument set-up.

No pipe shall be installed in tunnels except as provided on the plans, or with the permission of the Engineer. If the Contractor finds it necessary to install pipe in tunnels not provided on the plans, he shall submit to the Engineer,

prior to commencement of work, a detailed outline of procedures, methods, and use of materials depending on existing soil conditions.

No horizontal or vertical curves shall be permitted in conformance with appropriate regulatory agency requirements.

Before leaving the work unattended, the upper ends of all pipelines shall be securely closed with a tight fitting plug or closure. The interior of laid pipe shall be kept free from dirt, silt, gravel, or foreign material at all times. All pipe in place must be approved before backfilling.

When replacing an existing system in place, Contractor shall maintain screens to prevent the entrance of construction debris into the sewer system.

The contractor shall furnish the engineer with an as-built plan indicating the location and length of all sewer mains and services (by station and end elevations).

848.4 MEASUREMENT: All sewer pipe will be measured from center of manhole to center of manhole or end of main. Measurement will be continuous through any fittings in the main, even though the fittings are pay items of the contract.

848.5 PAYMENT:

- a. Sewer pipe will be paid for at the contract bid price per linear foot complete in place for the types, size and depth constructed. Said price shall be full compensation for furnishing all materials, including pipe, trenching, pumping, concrete, plugs, laying and jointing, backfilling, select bedding and initial backfill material, tamping, water, labor, tools, equipment, and other incidentals necessary to complete the work.
- b. Sewer pipe fittings, as part of the main line such as wyes and tees, is inclusive in the cost of item 854, Sanitary Sewer Laterals.
- c. Pay cuts will be measured from the top of ground prior to the Contractor's operation and along the centerline of the pipe to the invert of the pipe.

ITEM NO. 849
AIR AND DEFLECTION TESTING
(SANITARY SEWER)

849.1 DESCRIPTION: This item consist of Air and Deflection Test in accordance with this specifications.

849.2 MATERIALS: The materials for Air and Deflection Test shall conform to the appropriate specifications contained within the latest revision of SAWS Material Specifications.

849.3 TESTING OF INSTALLED PIPE: An infiltration, exfiltration or low-pressure air test shall be specified. Copies of all test results shall be made available to the Inspector upon request. Tests shall conform to the following requirements:

1. Low Pressure Air Test: The procedure for the low pressure air test shall conform to the procedures described in ASTM C-828, ASTM C-924, ASTM F-1417 or other appropriate procedures, except for testing times. The test times shall be as outlined in this section. For sections of pipe less than 36-inch average inside diameter, the following procedure shall apply unless the pipe is to be joint tested. The pipe shall be pressurized to 3.5 psi greater than the pressure exerted by groundwater above the pipe. Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 pounds per square inch gauge to 2.5 pounds per square inch gauge shall be computed from the following equation:

$$T = \frac{0.085 \times D \times K}{Q}$$

T = Time for pressure to drop 1.0 pound per square inch gauge in seconds

K = 0.000419xDxL, but not less than 1.0

D = Average inside pipe diameter in inches

L = Length of line of same pipe size being tested, in feet

Q = Rate or loss, 0.0015 cubic feet per minute per square foot internal surface shall be used since a K value of less than 1.0 shall not be

used.

There are minimum testing times for each pipe diameter as follows:

Pipe Diameter	Minimum Time	Length for Minimum Time	Time for Longer Length
Inches	Seconds/Ft	Feet	Seconds/Ft
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1,020	133	7.693
21	1,190	114	10.471
24	1,360	100	13.676
27	1,530	88	17.309
30	1,700	80	21.369
33	1,870	72	25.856

The test may be stopped if no pressure loss has occurred during the first 25% of the calculated testing time. If any pressure loss or leakage has occurred during the first 25% of the testing period, then the test shall continue for the entire test duration as outlined above or until failure. Lines with a 27-inch average inside diameter and larger may be air tested at each joint. Pipe greater than 36 inch diameter must be tested for leakage at each joint. If the joint test is used, a visual inspection of the joint shall be performed immediately after testing. The pipe is to be pressurized to 3.5 psi greater than the pressure exerted by groundwater above the pipe. Once the pressure has stabilized, the minimum time allowable for the pressure to drop

from 3.5 pounds per square inch gauge to 2.5 pounds per square inch gauge shall be 10 seconds.

2. Deflection Testing: Deflection test shall be performed on all flexible pipes after these pipes have begun receiving flow. For pipelines with inside diameters less than 27 inches, a rigid mandrel shall be used to measure deflection. The test shall be conducted after the final backfill has been in place at least 30 days. No pipe shall exceed a deflection of five percent. If a pipe should fail to pass the deflection test, the problem shall be corrected and a second test shall be conducted after the final backfill has been in place an additional 30 days. The tests shall be performed without mechanical pulling devices. The design engineer should recognize that this is a maximum deflection criterion for all pipes and a deflection test less than five percent may be more appropriate for specific types and sizes of pipe. Upon completion of construction, the design engineer or other Texas Registered Professional Engineer appointed by the owner shall certify, to the Construction Manager, that the entire installation has passed the deflection test. This certification may be made in conjunction with the notice of completion required in the General Conditions.
 - a. Mandrel Sizing. The rigid mandrel shall have an outside diameter (O.D.) equal to 95% of the inside diameter (I.D.) of the pipe. The inside diameter of the pipe, for the purpose of determining the outside diameter of the mandrel, shall be the average outside diameter minus two minimum wall thicknesses for O.D. controlled pipe and the average inside diameter for I.D. controlled pipe, all dimensions shall be per appropriate standard. Statistical or other "tolerance packages" shall not be considered in mandrel sizing.
 - b. Mandrel Design: The rigid mandrel shall be constructed of a metal or a rigid plastic material that can withstand 200 psi without being deformed. The mandrel shall have nine or more "runners" or "legs" as long as the total number of legs is an odd number. The barrel section of the mandrel shall have a length of at least 75% of the inside diameter of the pipe. A proving ring shall be provided and used for each size mandrel in use.
 - c. Method Options: Adjustable or flexible mandrels are prohibited. A television inspection is not a substitute for the

deflection test. A deflectometer may be approved for use on a case by case basis. Mandrels with removable legs or runners may be accepted on a case by case basis.

849.4 **MEASUREMENT:** Air and Deflection Testing will not be measured for payment.

849.5 **PAYMENT:** No direct payment shall be made for Air and Deflection Testing, and all costs in connection therewith shall be included in the applicable contract price for the item to which the work pertains.

ITEM NO. 854
SANITARY SEWER LATERALS

854.1 DESCRIPTION: This item shall consist of sanitary sewer laterals installed in accordance with these specifications and as directed by the Engineer.

854.2 MATERIALS: The materials for sanitary sewer laterals shall conform to the specification contained in Item 848, "Sanitary Sewers".

854.3 CONSTRUCTION:

1. Sanitary sewer laterals fittings, and appurtenances shall be installed by the Contractor or as directed by the Construction Inspector or the Engineer.
2. Designation of Lateral: A sewer pipe located between the sanitary sewer main and the customers premise is designated as a "sanitary sewer lateral".
3. Service line Installation: All service line installations shall be performed in accordance with Item 848, "Sanitary Sewers," and Item 804, "Excavation, Trenching and Backfill," and as described herein. For sanitary sewer mains that are twelve inches in diameter or smaller, all laterals shall be connected using the appropriate size tee/wye placed in line with the main line. .

Connection to the customers end of the lateral shall be preformed using a "fermco coupling" or approved equal.

Cutting, excavation, backfill and replacement of pavement shall be as specified herein and in accordance with applicable sections of Item 400, "Excavation, Trenching, Backfill,".

4. It is the responsibility of the contractor to locate and connect each sewer service to the main line, and to maintain customer flows during the construction process.
5. Contractor to furnish engineer with an as-built plan indicating the location and length of each sewer lateral.

854.4 MEASUREMENT: Sanitary sewers shall be measured by the lineal feet installed at the various diameter sizes. The dimension shall be taken from the centerline of the main to the connection at or within the customer's property line or premise.

Measurement will be continuous through any fittings in the main.

854.5 **PAYMENT:** Sanitary sewer laterals shall be paid for at the contract bid price per lineal foot complete in place for the type, and size constructed. Price shall be full compensation for furnishing all materials, including pipe, pipe fittings (to include wyes, tees, bends), pumping, bedding, trenching or boring, trench protection, backfilling, tamping and other incidentals to complete the work.

Payment for the installation of two-way clean-out shall be paid per each under this line item.

ITEM NO. 858
CONCRETE ENCASEMENT AND CRADLES

858.1 **DESCRIPTION:** This item shall govern placing concrete encasements, and cradles, when called for by the project plans or as directed by the Engineer.

858.2 **MATERIALS:**

Concrete: All concrete shall conform to the provisions of Item No. 300, "Concrete (Natural Aggregate)," and shall be Class B concrete.

858.3 **CONSTRUCTION:**

1. Concrete Encasement: When concrete encasement is shown on the plans or when directed by the Engineer, the trench shall be excavated and fine graded to a depth conforming with details and sections shown on the plans. The pipe shall be supported by precast concrete blocks of the same strength as the concrete for encasement and securely tied down to prevent floatation. Encasement shall then be placed to a depth and width conforming with details and sections shown on the plans.
2. Concrete Cradles: When concrete cradles are shown on the plans or when called for by the Engineer, the trench shall be prepared and the pipe supported in the same manner as described in Paragraph 1 above and shall be constructed in accordance with details and sections shown on the plans.

858.4 **MEASUREMENT:** "Concrete Encasement and Cradles" will be measured by the cubic yard of accepted work, complete in place. Reinforcing, if required, shall not be measured for payment.

858.5 **PAYMENT:** "Concrete Encasement and Cradles" will be paid for at the unit price bid per cubic yard, which price shall be full compensation for furnishing and placing all materials, manipulation, labor, tools, equipment and incidentals necessary to complete the work.

ITEM NO. 3000

**SPECIAL SPECIFICATIONS FOR
HANDLING ASBESTOS CEMENT PIPE**

This item shall govern for the removal, handling, disturbance, and disposal of asbestos cement (AC) pipe and other asbestos containing materials (ACM) related to the AC pipe work. AC pipe is also known as transite pipe. Since buried AC pipe typically contains approximately 15% to 20% chrysotile and crocidolite asbestos, it is considered to be an asbestos-containing material. The material is classified as non-friable, unless broken at which time its classification changes to friable ACM. The removal and/or disturbance of this material is governed by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and the Occupational Safety and Health Administration (OSHA).

3000.1 Description: This item shall consist of the handling, disturbance, removal and disposal of AC water pipe, joints, wrappings and other ACM. In order to comply with NESHAP and OSHA regulations, this project will require workers with specialized training using wet work procedures to cut and remove AC pipe, AC pipe joints, valves (any type) containing ACM and surrounding soils containing ACM. A Texas Department of Health (TDH) licensed Asbestos Consultant shall develop the asbestos work practices and monitoring in the Contractor's Health & Safety Plan to be reviewed by SAWS and City of San Antonio (COSA) representatives. It is the contractor's responsibility to obtain the services of a licensed Asbestos Consultant authorized in the State of Texas and this work shall be considered subsidiary to this item. Any other ACM encountered that has not been identified by the SAWS inspector or not shown on SAWS plans will be not be authorized for payment. Any other disturbance, handling, or disposal of AC water pipe that is necessary due to authorized work by any other agency will be paid for by that agency under a different special specification and a different bid item number.

To meet and/or exceed NESHAP and OSHA guidelines, the contractor will subcontract the AC water pipe handling to an Environmental Protection Agency (EPA) accredited and TDH licensed Asbestos Abatement Contractor and TDH Licensed Asbestos Consultants.

An alternative method would entail the disturbance, handling, repair, and disposal of the AC pipe by an authorized TDH licensed worker with the required course of an asbestos worker awareness class or a TDH required asbestos training course preparing workers to handle disturbed ACM. Review of the asbestos work practices and monitoring in the Contractor's Health & Safety Plan will still need to be performed by a licensed TDH Asbestos Consultant.

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NESHAP guidelines apply to projects with at least 260 linear feet or 35 cubic feet or 160 square feet. NESHAPS also applies when AC pipe becomes or will become "regulated asbestos containing material" or RACM. This means that if at least 260 linear feet of the AC pipe has become crushed, crumbled, or pulverized, then the project is subject to the NESHAP. If the Texas Department of Health (TDH) limit of 260 LF is exceeded, it will be the responsibility of the contractor will be responsible for the TDH administrative fee. The asbestos consultant shall be responsible for submitting the TDH notification with copies also submitted to SAWS and the CITY, if the quantity of 260 LF is exceeded.

During the disjoining operation of AC pipe removal, only the portion that has become RACM would be counted toward the threshold amount if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. . If the generated AC pipe debris is not properly cleaned up, then the AC pipe must be considered contaminated, and the whole length is treated as asbestos-containing waste material. If the scope of this project may involve the threshold amount (260 linear feet or greater), then a Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All AC pipe projects will require that NESHAP and OSHA guidelines are met and/or exceeded in areas where AC pipe is to be disturbed. This means that all AC pipe disturbance will require a third party TDH licensed asbestos consultant and asbestos contractor on-site during AC pipe disturbance. An asbestos abatement work plan shall be provided to SAWS and City representatives by both the licensed asbestos consultant and asbestos contractor. Upon completion of the AC pipe project an air monitoring abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS and COSA representatives by the contractor's consultant. OSHA requires that during any ACM disturbance, regardless of amount, the asbestos worker(s) shall be properly protected during potential asbestos exposure, 29 CFR, Subpart Z, 1910.1101.

3000.2 Definitions: The following terms are defined for the nature of this work.

- A. Air Monitoring - The process of measuring the fiber concentration of a known volume of air collected during a specific period of time. The analysis procedure utilized for asbestos is the NIOSH Standard Analytical Method for Asbestos in Air, Method 7400. Transmission electron microscopy (TEM) may be utilized for lower detection limits and/or specific fiber identification.
- B. Air Monitoring Technician - The person licensed by the Texas Department of Health to conduct air monitoring for an asbestos abatement project or related activity. The Air Monitoring Technician may only obtain air

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samples, and may only perform analysis of air samples with an upgraded Air Monitoring Technician License, which includes completion of the NIOSH-582 equivalent course. The air-monitoring technician shall be an employee of a licensed asbestos laboratory or a licensed Asbestos Consultant agency.

- C. Amended Water - Water to which a surfactant has been added.
- D. Asbestos - The asbestiform varieties of serpentines and amphiboles. Specifically, chrysotile, crocidolite, grunerite, amosite, anthophyllite, actinolite, and tremolite.
- E. Asbestos Containing Material (ACM) - Material or products that contain more than 1.0% of any kind of asbestos.
- F. Asbestos Containing Waste Material - asbestos containing material or asbestos contaminated objects requiring disposal
- G. Authorized Personnel - Any person authorized by the Contractor and required by work duties to be present in the work area or other regulated areas.
- H. Authorized Visitor – SAWS representatives, and any representative of a regulatory or other agency having jurisdiction over the project.
- I. Asbestos Consultant - That person licensed by the Texas Department of Health to perform the following asbestos related functions:
 - (1) Project design; (2) Asbestos surveys and condition assessment of ACM; (3) Asbestos Management Planning; (4) The collection of bulk material samples, airborne substance samples and the planning of sampling strategies; (5) Owner-representative services for asbestos abatement projects or O&M programs, including air monitoring and project management; (6) Consultation regarding regulatory compliance and all aspects of technical specifications and contract documents; and (7) The selection, fit testing, and appropriate use of personal protection equipment and the development of asbestos related engineering controls.
- J. Abatement Contractor - The company, agency, or entity licensed by the Texas Department of Health that has been retained by SAWS or the Contractor to perform asbestos abatement and other associated functions.
- K. Class II Asbestos Work (OSHA Standard) – Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-

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containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

- L. Competent Person – One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them.
- M. Encapsulant - A specific adhesive designed to lock down and minimize the fiber release of asbestos containing materials and asbestos contaminated materials.
- N. Friable Asbestos - Asbestos-containing material, which can be crumbled to dust, when dry, under hand pressure, and includes previously non-friable material after such previously non-friable material becomes damaged to the extent that, when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.
- O. HEPA Filter - A high efficiency particulate air filter capable of removing particles > 0.3 microns in diameter with 99.97% efficiency.
- P. NESHAP - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).
- Q. NIOSH - The National Institute for Occupational Safety and Health.
- R. OSHA - The Occupational Safety and Health Administration.
- S. Regulated Area – An area established by the Contractor to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.
- T. Regulated Asbestos-containing Material (RACM) – (1) Friable asbestos material; (2) Category I non-friable ACM that has become friable; (3) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or, (4) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by forces expected to act on the material in the course of the demolition or renovation operations regulated by 40 CFR Part 61, Subpart M.
- U. Staging area – A pre-selected area where containerized asbestos containing waste material will be placed prior to removal from the project site.

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- V. Surfactant - A chemical wetting agent added to water to improve penetration.

3000.3 Applicable Standards and Guidelines: All work under these specifications shall be done in strict accordance with all applicable Federal, State, and local Regulations, standards, and codes governing asbestos abatement and any other trade work done in conjunction with the asbestos abatement. Work activities must also comply with these and other SAWS and City of San Antonio Specifications related to health and safety.

The most recent edition of any relevant regulation, standard, or code shall be in effect. Where there exists conflict between the regulations, standards, codes, or these specifications, the most stringent requirements shall be utilized.

The Contractor shall comply with, at minimum, the following specific regulations:

- A. Occupational Safety and Health Administration (OSHA) including but not limited to:
1. Title 29 Code of Federal Regulations Section 1910.1001 - General Industry Standard for Asbestos.
 2. Title 29 Code of Federal Regulations Section 1910.134 - General Industry Standard for Respiratory Protection.
 3. Title 29 Code of Federal Regulations Section 1926 - Construction Industry.
 4. Title 29 Code of Federal Regulations Section 1910.2 - Access to Employee Exposure and Medical Records.
 5. Title 29 Code of Federal Regulations Section 1910.1200 - Hazard Communication.
- B. Environmental Protection Agency (EPA) including but not limited to:
1. Title 40 Code of Federal Regulations Part 61 Subpart M - National Emission Standard for Asbestos.
- C. Texas Department of Health including but not limited to:
1. Texas Department of Health - Texas Administrative Code, Title 25, Chapter 295, Subchapter C - Texas Asbestos Health Protection.

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2. Texas Department of Health - Texas Administrative Code, Title 25, Chapter 325 - Texas Solid Waste Regulations.
 3. Texas Department of Health - Texas Civil Statutes, Article 4477-A, Section 12, General Provisions 295.31 to 295.73.
- D. American National Standards Institute (ANSI)
- E. American Society for Testing and Materials (ASTM)
- F. Department of Transportation - HM 181

3000.4 Submittals and Notices

- A. At the Pre-construction Conference/Meeting, all training records, certifications, medical records, and laboratory qualifications will be submitted for review to SAWS and COSA representatives as well as the following:
1. In order to comply with the SAWS Project Construction Health and Safety Program requirements for any project with the potential to involve friable ACM, the Contractor will be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, SAWS Special Specifications, Item Number 3000, and state requirements. As such, Contractors submitting bids for the project must have a Texas Department of Health (TDH) licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Plans submitted by the Asbestos Consultant must include the person or firms name, address, phone number and TDH certification. Health and Safety plans for working with ACM must address the guidance provided in these special specifications. The guidance provided in this special specification is not intended and does not constitute asbestos abatement project design as described under TAC 25, Chapter 295.47 (TDH asbestos regulations).
 2. Submit documentation satisfactory to SAWS and COSA representatives that an Initial and/or Negative Exposure Assessment in accordance with OSHA Standard 29 CFR 1911 has or will be performed (as applicable).
 3. Submit documentation satisfactory to SAWS and COSA representatives that the Contractor's employees, including foremen, supervisors and any other company personnel or agents who may

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be exposed to airborne asbestos fibers or who may be responsible for any aspects of asbestos disturbance activities, have received adequate training in compliance with applicable rules and regulations.

4. Submit documentation to SAWS and COSA representatives of a respiratory protection program for affected employees as per OSHA Standard 29 CFR 1910.134.
5. Submit documentation to SAWS and COSA representatives from a physician that all personnel who may be required to wear a respirator are medically monitored to determine whether they are physically capable of working while wearing the required respiratory protection without suffering adverse health effects. In addition, document that personnel have received medical monitoring as is required in compliance with applicable rules and regulations.
6. Submit to SAWS and COSA representative's documentation of respirator fit testing for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as detailed in the OSHA Standard 29 CFR 1910.134. Optionally, the fit testing may be quantitative in nature.
7. Name of OSHA monitoring Consultant/Lab. The Contractor will be responsible for air monitoring as required to meet OSHA Requirements.
8. Submit proof satisfactory to SAWS and COSA representatives that required permits, site location and arrangements for transport and disposal of asbestos containing waste materials have been made.

B. During Asbestos Disturbance Activities:

1. Submit copies to SAWS and COSA representatives of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area during the project. The Contractor will sign manifests as the SAWS's representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.
2. Upon completion of the AC pipe project an abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS and COSA representatives by the contractor's consultant.

3000.5 Construction Requirements

- A. The Work includes all Work specified herein, to include mobilization and demobilization, labor, materials, overhead, profit, taxes, transportation, disposal fees, administrative fees incidental cost, etc. Estimating areas, quantities, weight, etc., are the sole responsibility of the Contractor.
- B. The Contractor shall remove, seal, transport and dispose of all impacted asbestos-containing materials in compliance with all current Federal, State and local regulations, laws, ordinances, rules, standards and regulatory agency recommended requirements. Asbestos disturbance and/or removal activities shall be conducted by properly trained, accredited, and licensed personnel using proper personal protective equipment.
- C. The Contractor shall notify SAWS and City representatives, if applicable, at least 72 hours in advance prior to beginning removal and/or disturbance of the AC pipe. AC pipe disturbance shall be conducted during regular business hours, Monday-Friday. No weekend work of AC pipe disturbance is allowed, unless special circumstances require the contractor to do so.
- D. Time is of the essence in removing the asbestos-containing materials from the project area. All work must be completed within the time period specified. SAWS and the COSA representative will be responsible for coordinating this work in high-density areas, such as schools, church facilities, and residential areas.
- E. All required notifications required to state regulatory agencies will be made by the Contractor with a copies provided to SAWS and City representatives, including but not limited to the TDH Demolition/Renovation Notification Form. If 260 linear feet or greater of AC pipe will become crushed, crumbled or pulverized, then the project is subject to NESHAP regulations and a Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.
- F. The Contractor shall have an on-site supervisor, who is an OSHA Competent Person, present on the job site at all times that the work is in progress. This supervisor shall be thoroughly familiar with and experienced at asbestos disturbance and other related work and shall be

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familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all applicable EPA, OSHA, NIOSH and TDH requirements and guidelines.

- G. Prior to commencing any preparation of the work areas for asbestos disturbance, the Contractor shall post all required documents, warning signs and, as necessary, erect physical barriers in order that the work area may be secured.
- H. The Contractor has sole and primary responsibility for the “means and/or methods” of the work and obligation to SAWS to make inspections of the work at all stages and has sole responsibility to supervise the performance of the work. Certain work practices for AC pipe disturbance are prohibited as per Section 3000.10.B.1.
- I. The Contractor shall be responsible for site safety and for taking all necessary precautions to protect the Contractor’s personnel, SAWS and COSA personnel and the public from asbestos exposure and/or injury. The Contractor shall be responsible for maintaining the integrity of the work area.
- J. The Contractor shall confine operations at the site to the area requiring disturbance of AC pipe and the general site area associated with the proximity of the project. Portions of the site beyond areas on which the indicated work is required are not to be disturbed. The Contractor will not unreasonably encumber the site with materials or equipment. If asbestos containing waste materials are required to be stored overnight, it will be properly labeled, secured, and containerized to preclude unauthorized disturbance of the waste materials.
- K. The Contractor shall be responsible for the transport and disposal of asbestos containing waste materials to a duly licensed landfill facility permitted to accept asbestos waste. The Contractor shall be responsible for obtaining and coordinating waste disposal authorization from a TCEQ licensed landfill. Waste manifests shall be used to transport the AC pipe from the project site to the final landfill disposal site. The Contractor will sign manifests as the SAWS’s representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.

3000.6 Site Security

- A. The Contractor shall demarcate the area of AC pipe disturbance (“regulated area”) with barrier tape and warning signs, as per OSHA regulation 29 CFR 1926.1101. Access to the regulated area will be limited to only authorized personnel. Authorized personnel will have to have

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asbestos awareness training, respiratory training, etc. including SAWS and COSA personnel.

- B. Entry into the work area by unauthorized individuals shall be reported immediately to SAWS and COSA representatives by the Contractor.
- C. A logbook shall be maintained immediately outside of the regulated area. Anyone who enters the regulated area must record name, affiliation, time in, and time out for each entry

3000.7 Personal Protective Equipment

- A. All work which will or may disturb asbestos-containing materials as specified shall be accomplished utilizing, as a minimum disposal suits with protective head cover, gloves, boots, eye protection, proper respiratory protection, decontamination by HEPA vacuuming and/or wet methods and wet wiping all equipment. The Contractor shall provide hard hats and/or other protection as required for job conditions or by applicable safety regulations. Disposal suits consisting of material impenetrable by asbestos fibers shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing. Workers will be provided protective clothing from the time of first disturbance of asbestos-containing or contaminated materials until final cleanup is completed.
- B. Respiratory Protection: The Contractor shall use removal techniques, methods and equipment which will not permit the fiber count to exceed the OSHA Permissible Exposure Level (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air as detected by personal air sampling methods. Any remedial measures taken by the Contractor to meet this requirement will be at the Contractor's expense.
 - 1. The Contractor's Competent Person shall ensure use of the appropriate respiratory protection for the work being performed. For minimum legal respiratory requirements, see OSHA Standards 29 CFR 1910.134, 29 CFR 1910.1001, and 29 CFR 1926.1101. All respiratory equipment, such as respirators, filters, etc. shall be certified by the National Institute of Occupational Safety and Health (NIOSH) for use in asbestos contaminated atmospheres.
 - 2. The Contractor's Competent Person shall perform an Initial and/or Negative Exposure Assessment, which shall be performed on employees who have been trained in compliance with the OSHA regulations. Employees exposures shall be collected using objective data that is to demonstrate whether the materials specified for removal can release airborne fibers in concentration

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levels exceeding 0.1 fibers per cubic centimeters (f/cc) during an eight-(8) hour time weighted average (TWA) and the excursion limit of 1.0 f/cc. For the purpose of the assessment, the work conditions should be those having the greatest potential for releasing asbestos fibers. Removal methods using conventional hand tools shall be performed in an area that requires a minimum of a seven-(7) hour work shift with employees performing functions normally required for a total project. Removal, for the purposes of the assessment, should be performed with methods most likely to release fibers and that do not render the asbestos-containing materials friable. Properly trained employees shall wear proper protective clothing and respirators during the assessment. Initial and/or Negative Exposure Assessments shall be performed in accordance with OSHA Standard 29 CFR 1926.1101.

The development of the Health & Safety Plan by the Contractor's TDH licensed Asbestos Consultant shall include determining the adequacy of the Contractor's air monitoring data (which must be performed within the previous 12 months of the project start date) for the Initial and/or Negative Exposure Assessment, based in part on site-specific factors such as changes in personnel or work methods used during AC pipe removal. If this type of air monitoring data needs to be reviewed during the course of a project, the Contractor's Asbestos Consultant shall review the data in order to determine if it is adequate. Any downgrade in personal protective equipment related to asbestos exposure shall be requested in writing to SAWS Health & Safety Department, the COSA Environmental Services Department, and approved by a TDH licensed Asbestos Consultant. This request may be granted only when all regulations and pertinent sections of this special specification for respiratory protection are met.

3. The Contractor shall begin AC pipe removal operations (i.e., breaking, sawing, cutting, or repairing the pipe) in powered air purifying respirators (PAPRs) equipped with dual HEPA filters. PAPRs will be utilized until such time that air monitoring results indicate that half-face respirators may be used. Any changes (downgrade or upgrade) in respiratory protection will be based upon an 8-hour time weighted average (TWA) of fiber concentrations in the regulated area. Eight hour TWA's will be calculated daily by the Contractor's OSHA monitoring firm, for personal samples. The highest calculated 8 hour TWA shall be used to determine the type of respirator to be worn. The type of respirators worn will be selected in accordance with 29 CFR 1926.1101 (h) (3).

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The Contractor may request a respiratory protection downgrade, approved by a TDH licensed Asbestos Consultant, in writing to SAWS Health & Safety Department and COSA Environmental Services Department when all regulations and pertinent sections of this special specification for respiratory protection are met.

4. Workers shall be provided with personally issued, individually identified respirators.
5. No one wearing a beard shall be permitted to wear a respirator.

110.8 Air Monitoring

- A. Personal Air Monitoring: The Contractor shall provide personal air sampling as required by OSHA regulations. The OSHA TWA permissible exposure limit (PEL) for asbestos (0.1 f/cc) shall not be exceeded. Personal air samples shall be obtained by a TDH licensed Asbestos Air Monitoring Technician and analyzed by an accredited, independent TDH licensed Phase Contrast Microscopy (PCM) laboratory. OSHA monitoring results shall be posted at the project site and made available to all affected Contractor personnel on a daily basis.
- B. The Contractor shall provide, as a minimum, personal air monitoring on each worker who is cutting, (wet) sawing, breaking, or repairing the AC pipe.
- C. Area Air Monitoring: At any time that visible airborne fibers are generated or that wet work procedures are not used, all work will immediately cease until air monitoring by a TDH-licensed Asbestos Consultant Agency has started. The Contractor's on-site Competent Person shall be responsible for making this determination; however, periodic, random site visits by SAWS and COSA Inspectors will field-verify the objectivity of the Competent Person in these matters. Once initiated, the sampling and frequency of the area air monitoring will be dependent upon on the specific work practices being used by the workers at that time. However, the area air monitoring shall include, as a minimum, samples collected inside the regulated area, and upwind and downwind of the regulated area. The TDH licensed Asbestos Consultant Agency hired by the Contractor shall determine the need for additional samples and shall amend the Health & Safety Plan (with a copy to SAWS and COSA) to include sampling protocols.
- D. Area air monitoring shall be conducted in accordance with applicable Federal, State, and local requirements. The cost of area air monitoring due to failure to use adequate wet work procedures will be borne by the

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Contractor. Copies of all results will be provided to SAWS and COSA representatives.

- E. Area air sampling shall be mandatory in high density areas such as schools, residential areas, and certain other locations as determined by SAWS and COSA representatives and made clear in individual SAWS bid documents/plans.

3000.9 Employee Training

- A. Training shall be provided by the Contractor to all employees or agents who may be required to disturb asbestos containing or asbestos contaminated materials for AC pipe handling and auxiliary purposes and to all supervisory personnel who may be involved in planning, execution or inspection of such projects. The training shall be in accordance with OSHA Standard 29 CFR 1926.1101 for "Class II asbestos work".
- B. At a minimum, Contractor employees who will be potentially exposed to asbestos shall have completed within the last 12 months, an 8-hour Asbestos Awareness training course taught by a TDH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos and work practices related to the handling of AC pipe.
- C. The Contractor's Competent Person shall have completed within the last 12 months, a 40-hour Asbestos Contractor Supervisor training course taught by a TDH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos, employee personal protective equipment, medical monitoring requirements for workers, air monitoring procedures and requirements for workers, work practices for asbestos abatement, personal hygiene procedures, special safety hazards that may be encountered, and other topics as required.

3000.10 AC Pipe Handling:

- A. General: The Contractor shall properly remove, handle, transport and dispose of all AC pipe specified in the SAWS bid documents/plans for this project. All work involving AC pipe and other ACM products must be addressed in Health and Safety Program documents submitted to SAWS and COSA representatives. To comply with the SAWS and COSA Project Construction Health and Safety Program, Contractors submitting bids for the project must have a TDH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety Program plans are to include

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provisions for the discipline of any worker failing to use wet work procedures or failing to use designated personnel protective equipment.

The Contractor shall remove ACM with wet methods or by other controlled techniques approved by the TDH, EPA, and OSHA and in accordance with these specifications and the Contractor-provided Health & Safety Plan. Alternative removal methods must be approved at time of the Contractor's submittals. The Contractor shall take special care to prevent damage to the adjacent structures, materials and finished materials not required for demolition to access ACM.

The Contractor shall limit his use of the premises to the work area indicated. Access to the work area shall be controlled by the Contractor. All electrical equipment, etc., shall have ground fault circuit interrupter (GFCI) protection. The Contractor shall properly demarcate, barricade and contain the work and/or regulated areas.

The work consists of providing GFCI protection, the use of approved equipment with engineering controls, sufficiently wetting the asbestos-containing materials using a surfactant or lock-down encapsulant, removing the asbestos-containing materials, HEPA vacuuming the work area, wet wiping the work area, double-bagging/double-wrapping the waste and removing carefully as indicated herein and in accordance with the Contractor-provided Health & Safety Plan.

- B. Equipment: Equipment used to cut, break, or otherwise disturb AC pipe and associated asbestos-containing materials may include, but are not limited to: wet-cutting saws, saws equipped with point of cut ventilator (saw equipped with a water mister) or enclosures with HEPA filtered exhaust air, snap cutters, manual field lathes, pressure and non-pressure tapping devices.

Equipment used to either control visible emissions of fibers, contain the work area, or facilitate the clean-up of debris may include, but are not limited to: airless spray equipment, pump-up sprayers, surfactant, lock-down encapsulant, HEPA vacuums, brushes, brooms, shovels, disposable rags, polyethylene sheeting of 6-mil thickness, moisture resistant duct tape, asbestos warning signs, notices and barrier tape.

Alternative dismantling equipment may be substituted for the materials indicated herein, but must be approved by the SAWS Health & Safety Office and/or COSA Environmental Service Department.

1. Prohibited Work Practices and Engineering Controls: the following work practices and engineering controls shall not be used for work

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related to asbestos or for work which disturbs ACM, regardless of asbestos exposure or the results of Initial Exposure Assessments:

- a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
 - b. Other high-speed abrasive tools, such as disk sanders.
 - c. Carbide-tipped cutting blades.
 - d. Electrical drills, chisels, and rasps used to make field connections in AC pipe.
 - e. Shell cutters used to cut entry holes in AC pipe.
 - f. A hammer and chisel used to remove couplings or collars on AC pipe.
 - g. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud generated by the compressed air.
 - h. Dry sweeping, dry shoveling or other dry clean-up of dust and debris containing ACM.
 - i. Employee rotation as a means of reducing employee exposure to asbestos.
- C. General Removal Work Practices: AC pipe has been identified as a non-friable ACM with the potential to become friable ACM. The material is classified as non-friable, unless broken at which time its classification changes to friable. NESHAP guidelines apply to projects with at least 260 linear feet or 35 cubic feet or 160 square feet. NESHAPS also applies when AC pipe becomes or will become "regulated asbestos containing material" or RACM. This means that if at least 260 linear feet of the AC pipe has become crushed, crumbled, or pulverized, then the project is subject to the NESHAP. During the disjoining operation of AC pipe removal, only the portion that has become RACM would be counted toward the threshold amount if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. . If the generated AC pipe debris is not properly cleaned up, then the AC pipe must be considered contaminated, and the whole length is treated as asbestos-containing waste material. If the scope of this project may involve the threshold amount (260 linear feet or greater), then a

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Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All AC pipe projects will require that NESHAP and OSHA guidelines are met and/or exceeded in areas where AC pipe is to be disturbed. This means that all AC pipe disturbance will require a third party TDH licensed asbestos consultant and asbestos contractor on-site during AC pipe disturbance. An asbestos abatement work plan shall be provided to *SAWS* and City representatives by both the licensed asbestos consultant and asbestos contractor. Upon completion of the AC pipe project an air monitoring abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to *SAWS* and *COSA* representatives by the contractor's consultant. OSHA requires that during any ACM disturbance, regardless of amount, the asbestos worker(s) shall be properly protected during potential asbestos exposure, 29 CFR, Subpart Z, 1910.1101.

In order to comply with *SAWS* Project Construction Health and Safety Program requirements for any project with the potential to involve friable ACM, the Contractor will be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, and state requirements. As such, Contractors submitting bids for the project must have a TDH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety plans for working with ACM must address the guidance provided in these special specifications.

- D. A sufficient supply of disposable rags for work area decontamination shall be available.
- E. Disposal bags for RACM shall be of true 6-mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.152 (b)(i)(iv) or OSHA requirement 29 CFR 1926.1101(k)(8).
- F. Stick-on labels identifying the Generator's name (*SAWS*) and address and the project site location shall be applied to any asbestos waste bags that contain RACM, as per EPA or OSHA and Department of Transportation HM 181 requirements.
- G. Work Area Preparation: Post warning signs and barrier tape meeting the specification of OSHA 29 CFR 1910.1001 and 40 CFR 61 at any location and approaches to a location where airborne concentrations of asbestos may exceed the PEL. Signs shall be posted at a distance sufficiently far enough away from the work area to permit an employee to read the sign

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and take the necessary protective measures to avoid exposure. Maintain constant security against unauthorized entry past warning signs and barrier tape. Signs will be in both English and Spanish.

H. Personnel exit procedures

1. Before leaving the work area all personnel shall remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet wiping procedures. (Small HEPA vacuums with brush attachments may be utilized for this purpose.) Adequate washing facilities shall be provided and utilized on-site.
2. Upon completion of the work, contaminated gloves shall be disposed of as asbestos contaminated waste. Disposable cloth gloves may be substituted for leather gloves, at the Contractor's discretion. (Rubber boots may be decontaminated at the completion of the project.)

I. Specific Removal Work Practice Requirements

1. The Contractor has sole and primary responsibility for the "means and/or methods" of the work and obligation to SAWS and COSA to make inspections of the work at all stages and has sole responsibility to supervise the performance of the work.
2. The Contractor shall isolate the regulated area with barrier tape and asbestos warning signs.
3. The Contractor shall lay and secure 6-mil polyethylene sheeting on the ground on both sides of the AC pipe for the length of the work area.
4. Working within the regulated area, using wet removal methods, the Contractor shall thoroughly soak each section of AC pipe to be disturbed, prior to any removal activity, with a surfactant or lock-down encapsulant. The Contractor shall use equipment capable of producing a "mist" application to reduce the potential for release of fibers. The Contractor shall take care to use as much encapsulant or surfactant as needed in order to lockdown possible fallout debris from edges and joints during removal. Provide continuous wetting of the materials throughout the entire removal process. The Contractor shall take care to limit the breakage of asbestos containing materials and remove these materials as intact as possible.

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5. Any AC pipe debris on adjacent surfaces shall be removed. The Contractor shall promptly clean up asbestos wastes and debris following AC pipe disturbance. Remove and containerize all visible accumulations of asbestos containing material and asbestos-contaminated debris by hand. Asbestos debris mixed with soil may be picked up with shovels, with the contaminated soil being containerized as a regulated ACM waste. Clean-up activities may also involve vacuum cleaners equipped with HEPA filtration or wet-wiping surfaces with disposable rags. Contaminated rags shall be containerized as a regulated ACM waste.
 6. After disturbance and clean-up activities and prior to removal of the AC pipe from the regulated area, the Contractor shall encapsulate damaged and exposed areas and ends of the AC pipe with a lock-down encapsulant.
 7. The Contractor may now remove the Category II non-friable asbestos-containing material "that is not in poor condition and is not friable" as defined in NESHAP regulations. The Contractor shall remove all AC pipe "intact" and in whole complete sections by carefully lifting the AC pipe to the disposal container using approved equipment. The Category II non-friable AC pipe must not become "friable" (crumbled, pulverized, or reduced to a powder). The Contractor shall not drop, break and/or otherwise make the AC pipe susceptible to release asbestos fibers. If these procedures are followed and debris is cleaned up properly, then the Category II non-friable AC pipe may be disposed of as nonregulated asbestos-containing waste material.
 8. Pieces of AC pipe debris shall be considered RACM and handled as regulated ACM waste. The debris shall be placed in two 6-mil asbestos bags or double wrapped, with proper labeling.
- J. Abandonment of AC water mains/pipes: The Contractor is responsible for isolating the existing mains to remain in service by capping, plugging and blocking as necessary. The opening of an abandoned ac water main and all other openings or holes shall be blocked off by manually forcing cement grout or concrete into and around the openings in sufficient quantity to provide a permanent watertight seal. Abandonment of old, existing AC water mains will be considered subsidiary to the work required, an no direct payment will be made.
- L. Abandonment of Valves that contain ACM: Valves to be abandoned in the execution of the work shall have the valve box and extension packed with sand to within eight (8") inches of the street surface. The remaining eight (8") shall be filled with 2,500 psi concrete or an equivalent sand-cement

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mix and finished flush with the adjacent pavement or ground surface. The valves covers shall be salvaged and return to SAWS. The abandonment of valves containing ACM will be considered subsidiary to the work required, and no direct payment will be made.

M. Verification of Removal & Clean-up Procedures: The Contractor's on-site Competent Person shall inspect the work area and ensure that all surfaces are free of AC pipe dust and debris.

N. Disposal Procedures

1. If a dumpster/trailer is used for temporary storage it will be secured and closed at all times except when loading. It will be properly marked and critical barrier tape will be in place.
2. AC pipe debris and asbestos-contaminated items shall be properly double bagged, labeled and loaded in a fully enclosed, lined, locked and placard transport container and transported and disposed of in compliance with all regulatory requirements as RACM.
3. After being removed from the regulated area, Category II non-friable AC pipe shall be transferred to a polyethylene-lined container. Remove all containers as soon as practical, but no later than the end of the work shift.
4. When the dumpsters/trailers are full, they will be hauled away to the closest EPA approved landfill for proper disposal. The Contractor may dispose of the Category II non-friable AC pipe waste material as non-regulated waste in a municipal solid waste landfill as defined in the NESHAP and TCEQ Rule (Type I Landfill). Written approval to transport and accept the Category II non-friable material shall be obtained from a pre-approved transporter and landfill and submitted to SAWS and COSA representatives prior to disposal.
5. Submit copies to SAWS and COSA representatives of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area during the project. The Contractor will sign manifests as the SAWS's representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.

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3000.11 Measurement: Measurement of the items “Asbestos Abatement Work Plan” and “Removal, Transportation, and Disposal” as specified herein shall be by the “lump sum.”

3000.12 Payment: The work performed as prescribed by these items shall be paid for at the contract lump sum price bid for “Asbestos Abatement Work Plan” and “Removal, Transportation, and Disposal,” which prices shall be full compensation for the work herein specified including the furnishing of all materials, equipment, tools and for the material disposal, submittals, labor and air monitoring necessary to complete the work.

3000.13 BID ITEM:

3000.14 - Removal, Transportation, and Disposal – Lump Sum

3000.15 - Asbestos Abatement Work Plan – Lump Sum

STANDARD PLAN NOTE:

Asbestos Cement (AC) pipe, also known as transite pipe and which is known to contain asbestos-containing material (ACM), is located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occur. Payment for such work is to be made under Special Specification Item No 3000, “Special Specification for Handling Asbestos Cement Pipe”.

